

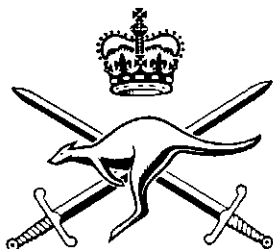
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# ARMY JOURNAL

No. 289 JUNE 1973



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## ARMY JOURNAL

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**COVER:** Detail from diorama 'Salvation Army Post, Imita Ridge,' at the Australian War Memorial.

# ARMY JOURNAL

*A periodical review of military literature*

**No. 289, JUNE 1973**

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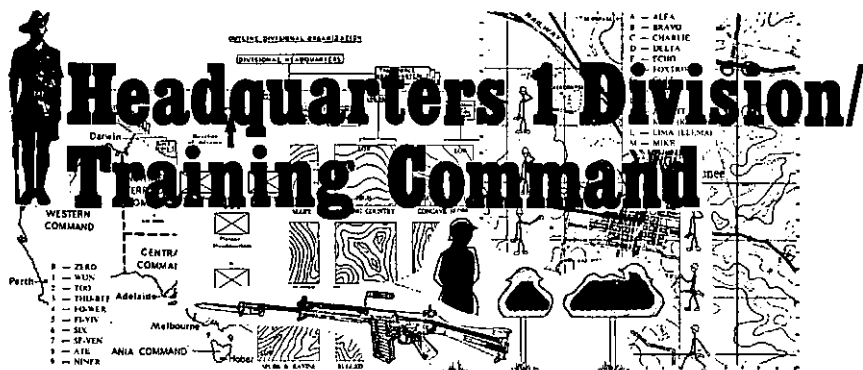
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Troops of the 2nd AIF on a training march at Dier Sunied, October 1941.

*(Australian War Memorial)*



*Prepared by Headquarters 1 Division*

**A**FTER reading the Army Reorganization Planning Staff article in the last December issue we thought it might be appropriate to add some brief thoughts derived from our experience to date as the headquarters of a functional command; a new entity in the Australian Army.

Deliberately some of our writing is in a lighter than usual mood. This is not because we view what we do with levity but rather because we are enjoying most of what we are doing and are excited about plans and possibilities for the future.

We have had about a year now to collect staff, get ourselves organized and to clarify and confirm our procedures. Most of our teething pains are behind us. No longer do we have that awful feeling of being a one legged man striving to participate in a backside kicking competition. During this year also our training staffs consisting of some 6,100 all ranks handled a student body of 3,000 officers, 6,000 warrant and non commissioned officers, 10,000 other ranks and 14,000 recruits; in all, 33,000 students.

On the personnel front, Army personnel have been provided quickly to staff the headquarters. Public Service personnel have not appeared so quickly. We knew that justification of staff positions, selection and appointment procedures would take time but they have been slower than we had hoped. We are still a few down.

One of our interesting and oft unappreciated facts of life has been that until quite recently, nobody had taken over a 'going concern' appointment from anyone. Each man or woman found themselves in a

new chair with new things to organize and new things to think of. Inevitably this had led to original thought, examination of problems in depth and great suspicion of sacred cow concepts. It has produced the very heartening and refreshing picture of a staff taking control of cupboards full of problems but devoid of skeletons.

Within the headquarters we have maintained an effective 'open door' policy. Any member of the staff who has come up with an idea or who has identified a problem has been free to take it directly to the most appropriate senior member of the staff and thrash it out. This has provided encouragement for ideas and for problem solving and done much to ensure speedy and efficient and modern teamwork.

Between the headquarters and units under command the same open door policy has been maintained with marked success.

For a headquarters to succeed in this environment, careful selection of individuals and matching of personal skills to appropriate fields of endeavour have been essential and have reflected considerable credit on those responsible for personnel selection and appointment.

For the earlier months of our existence we were plagued by statements from other quarters such as — 'you can't do that' or 'you can't take that on, it is too extensive or too difficult'. In every case thoughts such as these sprang from inadequate thinking through of a problem or inadequate assessment of what can be achieved given organization and application. We are glad to say this sort of thing is dying away.

We have experienced also lack of forward planning and even pig-headedness in some quarters. The Army is, perhaps of necessity, a conservative organization. Many are given to accept change only with reluctance and there is a tendency to try to force old procedures to fit the new organization. To compound the problem we also had to add the unfortunate fact that in reality the headquarters was working on a trial basis even though it had been required to accept command responsibilities to the fullest possible extent. These things certainly led to frustration and delays but it is completely true to say that we had no real problems in taking command of the Army training organization.

This brings us to the all important matter of communication and communication skills. We have found it essential to consult frequently and in detail with other commands and other institutions over problems



of the present and plans for the future. There is nothing new in this but it has enabled us to avoid misunderstandings or lack of action due to lack of knowledge. We have relearnt the lesson that adequate communication between the parties to a potential problem usually results in the discovery that there really is no problem. Such activity of course has not been without pathos as witnessed by the following extract from the 1972 log.

*Comand Headquarters officer:* 'If necessary I can get the backing of a two star general for my plan.'

*Our officer:* 'Well, we've got one of them too you know.'

*Command Headquarters officer:* 'Well I'm sure my general would get the VCGS's support.'

*Our officer:* 'The VCGS actually approved this plan last Friday. Now can we get on with it!'

Our Corps Schools and Training Establishments have accepted their new parents with enthusiasm. Whether real or politely feigned perhaps we will never know. What is certain is that collectively there has been a great deal of team work in identifying and overcoming problems in training establishments and this in turn has created corporate spirit which is both self perpetuating and healthy.

In the training operations field, as one would expect, the most pressing problems and those in which our influence would be most apparent were tackled first in order to help to calm troubled waters and to establish credibility.

Inconsistencies, duplications and inequalities were quickly and quite easily identified because, for the first time, all individual training was being scanned without vested interest or bias by a simple entity blessed with almost adequate staff and with adequate experience. For example, in the case of Corps Schools, the relative rank of their Corps Directors no longer had the same influence.

We recall with some enjoyment the Corps School Commanding Officer who, when asked to examine a particular problem and to provide certain information replied that the study had been completed, forwarded to his Head of Corps, who no doubt would release a copy to us. He was quite happily disillusioned.

On the other hand we have been very careful, and we hope successful, right from the outset to encourage and to foster Corps

Directors in their proper functions of technical control of their Corps and advisers both at Army and Functional Command levels.

One of our greatest strengths has been to have about one third of our staff time and effort devoted to the identification of problem areas in the individual training field and to the development of new ideas and new methods. We have been able to take a long and serious look at such things as leadership, rifle shooting, recruit, apprentice management, warrant and non-commissioned officer training, location and grouping of corps schools, the systems approach to training, training aids and so on. This should be a list of topics in which any soldier worth his salt will identify subjects of real personal interest and concern. A number of changes, we hope for the better, have been made and a number of submissions have been made to Army Headquarters. More are in hand.

Apart from numerical deficiencies in our civil staff, we are still frustrated by the absence of adequate financial delegations. We are aware that these matters are in hand and that patience is a virtue.

There are many other aspects of the Headquarters staff and procedures worthy of mention here but two stand out.

The command group includes one of the most experienced and distinguished Warrant Officers Class 1 who carries the informal title of Army Schools RSM. He has direct access to all ranks in the training system from private to major general. He travels extensively and is an invaluable source of assistance, information problem identification and ideas up and down the chain. There has been no question of his appointment crossing the normal chain of command or system of administration.

Secondly there is the integration of Education Corps officers into the appropriate sections of the staff. So often one finds specialists such as these held in a small independent cell in a technical advisory capacity. In our case the senior officer, a lieutenant colonel, was made a member of the command group where he is positioned to participate directly in our work at that level. The officers integrated throughout the headquarters are also positioned to feed their contributions directly into the blood stream of the whole organization.

Of course all is not a bed of roses. Like most other people we have our problems. We are beset by limited resources of manpower



and accommodation which are magnified by the need to maintain uneconomical and divided institutions. We are concerned too with the backlash of pressures resulting from the extended overseas commitments since World War II, our rapidly expanding (and more recently even more rapidly contracting) army. Professional dedication, training methods and standards need reinforcing while work pressures on some individuals need to be reduced.

We look forward very much to the major steps in army re-organization which are planned for later this year and for our full recognition as Training Command in a system of functional commands. □

#### LESSONS FROM MIDDLE EAST OPERATIONS

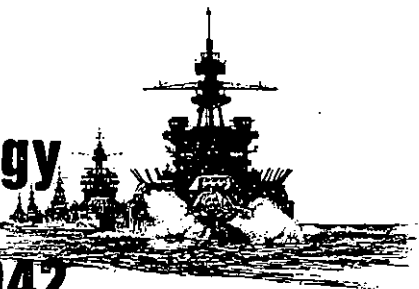
The basic problem that will beset us in the early stages of any major war in which we might become engaged in the immediate future will, in all probability, closely resemble the problem that faced General Wavell in the early days of the Middle East. That is to say, we will be faced with an extreme scarcity of everything, men, weapons and materials. We shall have to do a great deal with very little. If we accomplish half as much as Wavell did, we will do very well indeed.

It is not easy for anyone who was not in the Middle East at the time to appreciate the extreme scarcity of warlike stores that obtained in the early days. There was hardly a fully equipped battalion or battery in the theatre. The first Australian battalions to arrive were lucky if they could get one Bren LMG to train with. Vehicles and other essential equipments were equally scarce. Formations could be partially equipped for operations only by stripping other formations. Practically all the installations necessary in an overseas base were non-existent or present in skeleton form only.

—Colonel E. G. Keogh, *Middle East 1939-43*.

# The Crisis of Japanese Strategy

## January - June 1942



*Professor L. C. F. Turner*

ON 15 November, 1941 Japanese Imperial Headquarters approved the following plans:

- To capture American, British and Dutch bases in South-East Asia.
- To establish a 'southern vital resources area' and lines of communication to enable Japan to become self-sufficient for an extended period of time.
- To draw out and destroy the main strength of the United States Navy.

By the end of March 1942 this plan had been conspicuously successful. On 8 December 1941 the Japanese official communique proclaimed that 'the United States Pacific Fleet had suffered an annihilating blow and this on the first day of hostilities'. Two days later the battleship *Prince of Wales* and the battle-cruiser *Repulse* were sunk off the Malayan coast, and all the British and Dutch possessions in the Far East lay at the mercy of the Japanese.

On 25 December Hong Kong capitulated. Singapore fell on 15 February 1942 and on the 17th the Allies evacuated Sumatra. On the 19th eight merchant ships were sunk and great quantity of stores destroyed in a carrier strike against Darwin. On 27 February the Battle of the Java Sea disposed of Allied naval power in the East Indies. On 8 March the Japanese thrust into Burma had forced the British to abandon Rangoon. With the occupation of the Andaman Islands on 23

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*Professor L. C. F. Turner is Professor of History at the Royal Military College of Australia, Duntroon. The article consists of a paper delivered by the author at the ANZAAS Congress, Port Moresby in August 1970. It is reprinted, by permission, from the March 1972 issue of the RMC Historical Journal.*

March, the Japanese took their first stride into the Indian Ocean. Although American forces were still resisting in the Philippines, the initial objectives of the Japanese High Command had been attained in less than four months fighting. The Japanese 'floating Blitzkrieg' had achieved a series of uninterrupted triumphs rarely paralleled in the annals of war.

The swift conquest of Malaya, Burma, the Dutch East Indies and the Philippines placed an enormous empire in Japan's grasp and there was much debate at Imperial Headquarters about her next course of action. Before considering these plans, however, it is proposed to examine Japan's relations with Germany and the attempts of the Axis powers to concert a common strategy.<sup>1</sup>

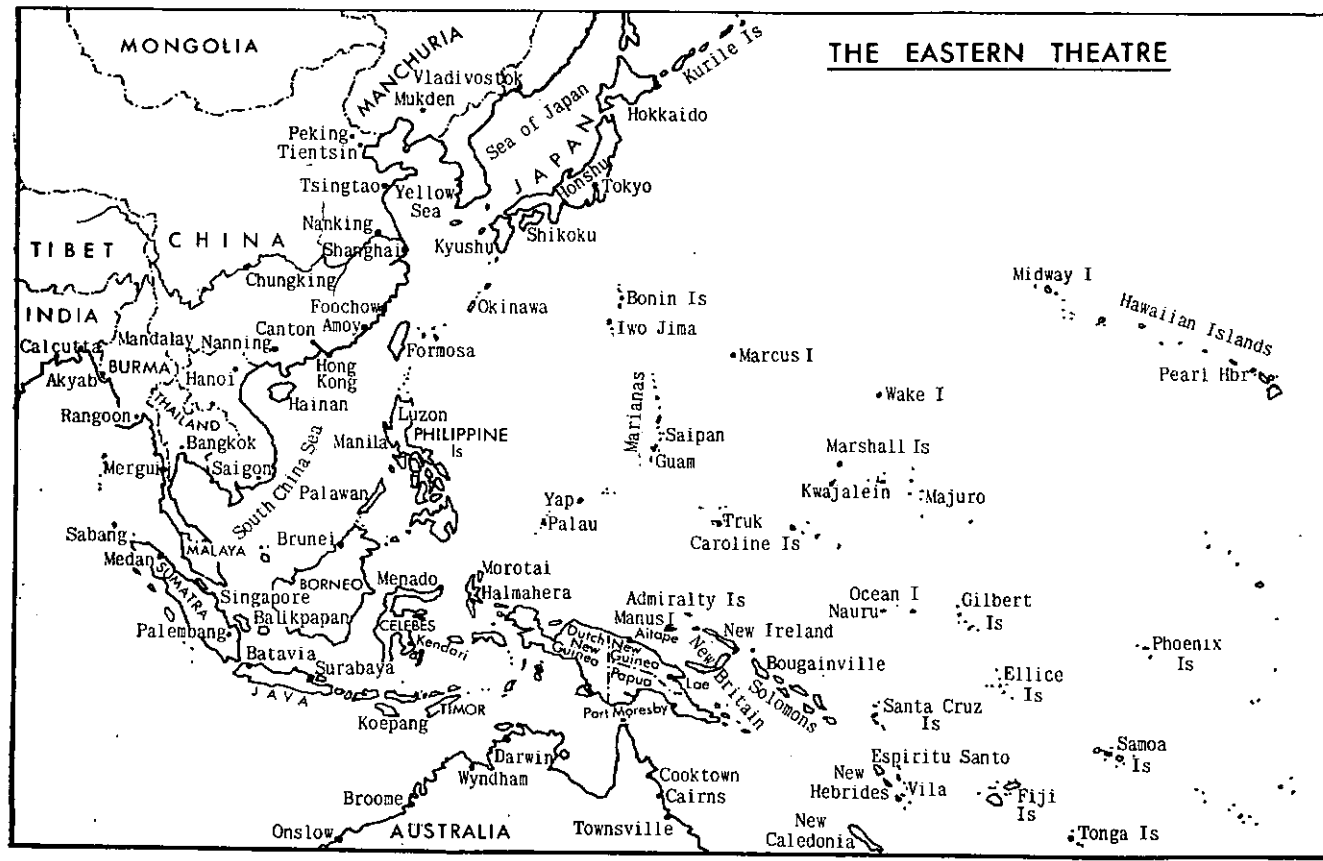
On 17 December 1941 Admiral Fricke, Chief of Staff of the *Oberkommando der Marine*, met Vice Admiral Nomura, the Japanese Naval attaché in Berlin and members of his staff, to discuss the delimitation of the respective operational areas of the German and Japanese military and naval forces. These initial discussions augured ill for co-operation between the two allies. The Japanese proposed that the boundary line between the two powers should be longitude 70° East, which would have placed most of Siberia and the greater part of the Indian Ocean within the Japanese sphere of influence. After the conference, Admiral Fricke told his staff that there were 'grounds for suspicion' that the Japanese were not really interested in fixing military areas, but wanted to establish their claim to political spheres of interest. He said: 'If the Jap is really prepared to move the boundaries of the operational area in accordance with circumstances, why does he stick so stubbornly to the 70° East boundary? Is it not possible that this line has some meaning, particularly on land? It hands over most of India to the Japanese and runs to Tashkent-Sverdlovsk-mouth of the River Ob. Tokyo (140° East) then becomes the navel of the sector of the globe from 70° East to 150° West (Hawaii).' The Japanese insistence that most of Siberia was a Japanese preserve is of great significance in assessing their strategy in the first months of 1942, and will be referred to later in this article.

With regard to the boundary in the Indian Ocean, Admiral Fricke proposed a diagonal running from the Gulf of Aden to northern Aus-

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<sup>1</sup> The passages which follow are based on unpublished German official documents dealing with German Japanese high level naval policy.

# THE EASTERN THEATRE



tralia, thus including Australia within the German sphere of influence. In view of the adamant opposition of the Japanese, however, the Germans were forced to give way and concede the 70° line across the whole of Asia and the Indian Ocean.

Hitler and Mussolini expected great things of Japan, and the Duce was fond of declaring that he was 'the foremost pro-Japanese in the world'. On 7 March 1942 Mussolini remarked to his son-in-law, Count Ciano: 'This war is for the Germans and the Japanese, it is not for us'. However on 23 May 1942, Ciano's diary reads: 'The Duce telephoned indignantly charging that the Japanese ambassador, Shiratori, had made certain statements which were not acceptable: the dominion of the world belongs to Japan, the Mikado is the only god on earth, and that both Hitler and Mussolini must become resigned to this reality'.

On 18 January 1942 a military agreement was formally signed by the representatives of Germany, Italy and Japan. The line 70° East was accepted as the boundary of their respective military and naval zones, but it was stipulated that 'in the Indian Ocean operations may be carried out beyond the agreed boundary if required by the prevailing situation'. The agreement was couched in very broad terms—so broad as to be almost meaningless—but it was laid down that in the event of a concentration by the British and American fleets in the Atlantic, Japan would intensify her operations in the Pacific and Indian Oceans and 'in addition despatch part of her naval forces into the Atlantic Ocean and co-operate there with the German and Italian Navies'. A vague reference was made to establishing air contact and a sea route across the Indian Ocean.

On 10 February 1942, in a discussion with Admiral Groos, Chairman of the Military Commission for the Tripartite Pact, Admiral Nomura urged that Germany and Japan should now concentrate all their efforts on knocking Britain out of the war, and he advised the Germans not to become heavily committed to another major offensive against Russia. He wanted the Germans to attack in the Middle East and drive for the Suez Canal and the Persian Gulf, thus creating conditions 'for a decisive thrust by Japan against the Anglo-American sea routes in the western part of the Indian Ocean in the direction of the Red Sea and the Persian Gulf'. Nomura gave warning that 'should no such advance materialise on the German side a Japanese effort in this direction would also miss its aims and Japan would no longer be interested'.

He added that, 'It is only in this direction [i.e. the Indian Ocean] that an opportunity for close strategic co-operation presents itself'.

On 15 February, Admiral Raeder, Commander-in-Chief of the German Navy, conferred with Hitler and expressed his confidence that the Japanese would soon conquer Ceylon and be in a position to menace the vital Allied supply routes to Egypt and the Persian Gulf. He said:

The Suez and Basra positions are the western pillars of the British position in the Indian area. Should these positions collapse under the weight of concerted Axis pressure, the consequences for the British Empire would be disastrous. An early German Italian attack on the British key position of Suez would therefore be of the utmost strategic importance.

On 21 February German Naval Headquarters signalled to their attaché in Tokyo and gave details of suitable landing places in Ceylon, and for some weeks Raeder seems to have been under the impression that a Japanese invasion of the island was imminent. At a conference with Admiral Nomura on 27 March, Admiral Fricke, Raeder's Chief of Staff, emphasised the vital importance of the Indian Ocean to the Axis powers and expressed a 'lively desire that the Japanese Navy should begin operations against the enemy sea routes in the northern Indian Ocean as soon as possible'. In his reply Nomura said that this appreciation corresponded with his own and that of the Japanese Naval Staff. He admitted, however, that 'owing to the strict secrecy observed by Tokyo he knew nothing of the operational intentions of the Japanese High Command'. The Germans concluded the conference by urging their 'desire to be informed at an early stage by the Japanese about the probable timing of operations in the Indian Ocean, and also about operational plans, if any, against Ceylon, the Seychelles or Madagascar'. Admiral Fricke asked bluntly whether the Japanese regarded operations against Australia and New Zealand as more important than the cutting of sea routes in the northern Indian Ocean.

On 8 April, Nomura and his liaison staff met Admiral Fricke and German officers at another conference. Nomura announced that 'the Japanese Admiralty intends to despatch four or five submarines and two auxiliary cruisers to operate in the Arabian Sea, on the East Coast of Africa, including Cape Town and in the waters of Madagascar, operations to last from the middle of May to the middle of July'. In his reply Fricke 'most heartily welcomed this intention of the Japanese as marking the beginning of energetic measures Japan was going to take against enemy sea communications in the western Indian Ocean'.

Nomura then referred to the conference of 27 March and the German desire to be informed of the timing of Japanese operations in the Indian Ocean. He said: 'The *Schwerpunkt* of Japanese naval operations is directed towards the destruction of the British and American naval forces in the Pacific and Indian area. The Indian Ocean has been recognised as a very important operational area. The Japanese Navy is intent on extending operations in the Bay of Bengal and the western Indian Ocean. The timing of operations against Ceylon or Madagascar is unknown'.

Nomura proceeded to emphasise the necessity for a simultaneous attack on the British forces in the Middle East by the Germans and Italians from the west, and by the Japanese from the Indian Ocean. He asked whether the Axis powers were prepared to make such a thrust against Egypt in one or two months' time and declared that 'otherwise an advance by the Japanese Navy in the direction Arabian Sea/northern Indian Ocean would be in vain'.

The minutes of the conference record:

Chief of the *Seekriegsleitung* (Fricke) explains that for any German-Italian operations against the Caucasus/Egypt areas an energetic tackling of the enemy's sea communications in the western Indian Ocean would be indispensable so as to prevent further arrivals of reinforcements. As the effect of naval operations of that kind does not immediately make itself felt, but only gradually and progressively, it is imperative that the necessary operations be commenced at once, without regard to the timing of German operations, with a view to bringing about if possible an immediate interception of enemy supplies. This is of vital importance to any German land operations.

In conclusion the Chief of *Seekriegsleitung* emphasises once again that in no circumstances would a threat develop to Japan from the United States Fleet in the Pacific as experience so far shows that the American fleet would never venture inside the range of the Japanese Navy and Air Force. It is therefore regrettable that the main Japanese naval forces have been tied down to defensive tasks and cannot be used in the important operational areas of the Indian Ocean.

Meanwhile the Japanese Navy had in fact launched a limited offensive in the Indian Ocean, and against British bases in Ceylon. These operations came within an ace of achieving a great Japanese naval victory, which could well have affected the whole trend of Japanese strategy in the Pacific War. It is proposed therefore to consider them in some detail.<sup>2</sup>

On 28 March Vice Admiral Nagumo's carrier group sailed from Kendari in the Celebes. Entering the Indian Ocean through the Timor

<sup>2</sup> For Japanese operations in the Indian Ocean in April 1942 see the British official histories of S. W. Kirby, *The War against Japan*, Vol. II, London, 1958, and S. W. Roskill, *The War at Sea*, Vol. II, London, 1956. There is also valuable material in W. S. Churchill, *The Hinge of Fate*, London, 1951, and R. Grenfell, *Main Fleet to Singapore*, London, 1951.

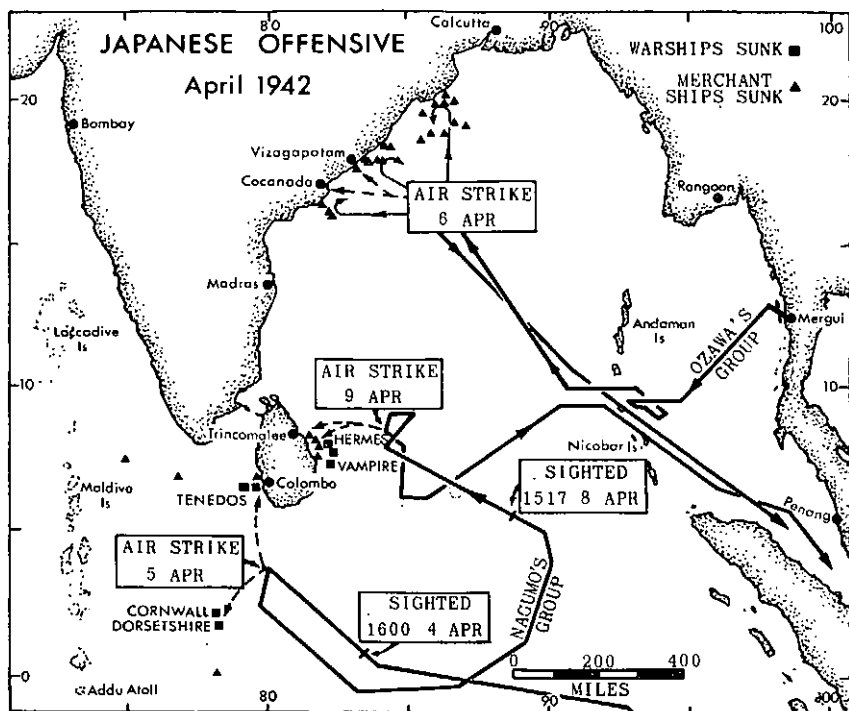


Sea, the Japanese squadron passed to the south of Java and swept far to the west. This was virtually the same striking force which had made the devastating attacks on Pearl Harbour and had covered the landings in New Guinea and the Dutch East Indies. On 19 February it had struck a violent blow at Darwin. At the beginning of April this force of five aircraft carriers, supported by four battleships, three cruisers and eleven destroyers was heading towards Ceylon.

The Japanese had no intention of invading Ceylon, and their immediate object was to cover their convoys operating between Singapore and Rangoon. They also hoped to cripple the British Eastern Fleet, which they knew was in the Ceylon-Maldives area. But instead of concentrating all efforts on finding the British ships and destroying them at sea, they proposed to deliver their main blows against the harbours of Colombo and Trincomalee. In addition to Nagumo's squadron, a squadron under Vice Admiral Ozawa was launched against shipping in the Bay of Bengal. The whole operation in the Indian Ocean was co-ordinated by Vice Admiral Kondo, the Commander-in-Chief of the Second Fleet, who was acting under directives issued by the Japanese Naval Staff in Tokyo.

On 29 March Admiral Somerville, the commander of the Eastern Fleet, received an intelligence report that a Japanese carrier force would make an air strike on Ceylon early in April. He resolved to meet the Japanese at sea and positioned his fleet to the south-east of Ceylon. He had under his command the fleet carriers *Indomitable* and *Formidable*, the light carrier *Hermes*, five battleships, five cruisers, and fourteen destroyers. Admiral Nagumo commanded five fleet carriers, four battleships, three cruisers and eight destroyers; his great superiority in carrier aircraft would have given the Japanese every advantage if the fleets had clashed in battle. However on 2 April Somerville had to withdraw to Addu Atoll to replenish his fleet and Nagumo was able to deliver his blow at Colombo without naval interference.

The Japanese attack was delivered on the morning of 5 April. Hurricane fighters rose to meet the Japanese aircraft and a fierce air battle developed over the city which the Japanese commander, Mitsuo Fuchida, noted was 'glistening in the sun' from a recent rain squall. Although the Japanese did some damage to the dock installations and had the better of the air fighting, the 91 bombers and 36 fighters which they used in the attack failed to secure any substantial success; 17 Japanese aircraft were lost against 25 British. However, on the after-



noon of 5 April the Japanese located the British cruisers *Dorsetshire* and *Cornwall* to the south of Colombo. In Churchill's words, 'the attack burst upon the two ships in a crescendo of violence'. 53 bombers attacked out of the sun and the accuracy of their bombing was uncanny. The *Dorsetshire* sank almost at once and the *Cornwall* went down after receiving eight hits.

While the attack was being made, Admiral Somerville was searching for the Japanese with his aircraft carriers *Indomitable* and *Formidable*, supported by the battleship *Warspite*. Reluctant to engage a greatly superior force in daylight, Somerville turned southwards on the afternoon of 5 April, when he learned of the attack on the cruisers. It was a very fortunate decision, for there is little doubt that if Admiral Nagumo had searched to the south-west he would have located the Eastern Fleet and would have had every opportunity of winning a tremendous naval victory. Nagumo's reconnaissance aircraft were searching for Somerville's ships but concentrated on the empty area to

the south-east of Ceylon. Churchill admits frankly, 'We had narrowly missed a disastrous fleet action', while Captain Russel Grenfell comments in his book *Main Fleet to Singapore* (pp. 172-3):

Had Sir James Somerville's force been sighted, brought to action and . . . annihilated by the Japanese fleet, the subsequent course of the war might, and probably would, have been different. The moral effect of a heavy naval defeat is always impressive and in this case must have been stupendous. One British Eastern Fleet had been destroyed by the Japanese in December, and Mr. Churchill has recorded that it gave him the worst shock of the war. Had a second and much stronger British Eastern Fleet been similarly disposed of in April, the shock not only to him but his countrymen would have been more than twice as heavy . . . .

It may be added that the destruction of the Eastern Fleet would have provided strong support for those Japanese strategists, who agreed with German Naval Headquarters that the best course open to Japan was to thrust westwards across the Indian Ocean.

On 7 April Churchill appealed to President Roosevelt for help from the United States Fleet; he expressed 'grave anxiety' about the situation in the Indian Ocean and the inability of the British to prevent an invasion of Ceylon. He urged an immediate offensive by the United States Pacific Fleet 'to compel the Japanese naval forces in the Indian Ocean to return to the Pacific'. Admiral Somerville was ordered to send his slower battleships to the East African coast and to keep away from Ceylon. The rest of the Eastern Fleet withdrew to Bombay and abandoned any attempt to oppose a Japanese invasion of Ceylon. The island was theirs for the taking.

Meanwhile the Japanese naval offensive was continuing. While Nagumo circled round for an attack on Trincomalee, Vice Admiral Ozawa's striking force of five heavy cruisers, two light cruisers, the light carrier *Ryujō* and eleven destroyers was playing havoc in the Bay of Bengal. In the course of a few hours on 6 April they disposed of nineteen merchant ships, totalling 92,000 tons, while Ozawa's aircraft bombed Vizagapatam and Cocanada. These raids caused panic in Madras, and there was a large exodus into the interior. Nor had the last been heard of Vice Admiral Nagumo, on 9 April he attacked Trincomalee with 91 bombers and 38 Zero fighters.

In the air battle over Trincomalee nine British aircraft were shot down, while several Japanese machines were lost. Once again the Japanese did most of their damage at sea. The light carrier *Hermes* and the Australian destroyer *Vampire* were located on the morning of

the 9th by 90 bombers; both ships sank under a hail of bombs which cost the lives of over 300 men. A gallant attempt by British bombers to attack the Japanese carriers was completely ineffective and several Blenheims were shot down.

After the attack on Trincomalee, Admiral Nagumo set course for the Straits of Malacca, whence he took the fleet carriers *Akagi*, *Soryu* and *Hiryu* right back to their dockyards in Japan. The fleet carriers *Zuikaku* and *Shokaku* were detached to the naval base at Truk, as it was intended that they should operate in the Coral Sea. As the American historian, S. E. Morison points out in his book *Coral Sea, Midway and Submarine Actions*, between the attack on Pearl Harbour and the bombardment of Trincomalee, Admiral Nagumo's carrier group had ranged over 120° of longitude and had traversed more than half the distance round the world. It had dropped bombs on Pearl Harbour, Rabaul, Amboina, Darwin and Ceylon, had inflicted tremendous damage on shore targets, and had accounted for hundreds of aircraft on the ground or in the air. It had sunk five battleships, one aircraft carrier, two cruisers and seven destroyers, had crippled several more capital ships, and had wiped out many thousands of tons of merchant shipping. It had achieved these results without losing a single ship; indeed not one of the great carriers had suffered the slightest injury. At the cost of less than a hundred aircraft and a few dozen pilots, Japan had established a maritime hegemony extending from the Aleutians to New Guinea and from the central Pacific to the Bay of Bengal. Admiral Nagumo's sally into the Indian Ocean appeared to set the crown on these achievements and to be the prelude to new and greater victories. This article will now consider in detail the various alternatives open to the Japanese High Command and the vital strategic decisions which it took in April 1942.<sup>3</sup>

By early January 1942 their succession of victories convinced Japan's strategic planners that the objectives set out in the Imperial directive of 15 November 1941 would all be readily attained. The problem arose whether Japan should be satisfied with a defensive perimeter running from the Kuriles to Rabaul and enclosing the Marshall

<sup>3</sup> The main source for Japanese strategic planning in 1942 is a work by two Japanese officers, M. Fuchida and M. Okumiya, *Midway: The Battle that Doomed Japan*, London, 1957. Some additional information is provided by D. Sissons 'Australia and New Guinea in Japanese Post Mortems', *Army Journal*, September 1957. In this article Sissons refers to a work by Colonel T. Hattori, *Complete History of the Greater East Asia War*, published in Japanese in 1953. Further information on Japanese strategic intentions is provided by D. Gillison in the Australian official history, *Royal Australian Air Force 1939-1942*, Canberra, 1962, p. 524.

and Caroline islands, the Dutch East Indies, Malaya, Thailand and Burma or whether she should thrust beyond this line to weaken the capacity of her enemies to launch a counter-offensive. In theory the decision rested with the Chiefs of the Army and Navy staffs at Imperial Headquarters. In practice, however, the Commander-in-Chief of the Combined Fleet exercised a dominating role in the discussions. The prestige of the Commander-in-Chief, Admiral Yamamoto, had been greatly enhanced by the success of the Pearl Harbour attack on which he had insisted in spite of much opposition in the Naval Staff.

In January 1942 the Chief of Staff of the Combined Fleet, Rear Admiral Ugaki, declared that time was working against Japan because of the vastly superior resources of the United States. He considered the three alternatives of attacking towards Australia, towards India, or towards Hawaii and decided in favour of the latter. In his view it was imperative to seek a decisive engagement with the United States Fleet in Hawaiian waters, and follow this up with the invasion and occupation of the islands.

Ugaki's staff officers examined the proposal and reported unfavourably. In their view it would not be possible for the Japanese carrier squadron to gain air superiority over the Hawaiian islands, and therefore the odds would strongly favour the Americans in any naval encounter. The Senior Operations Officer in the Fleet, Captain Kuroshima, proposed an alternative strategy. In his view the immediate objective should be control of the Indian Ocean in order to establish contact with Germany and annihilate the British position in the Middle East. The Japanese historians, Fuchida and Okumiya, comment (pp. 69-70):

Thus Combined Fleet began its study of the Kuroshima plan with the idea that the proposed westward operations should be part of a closely co-ordinated Axis offensive from two directions. However, this concept suffered an early setback when the headquarters received a copy of the new tripartite Axis Military agreement concluded on 19 January. The agreement, though it made passing reference to Germany's advance eastward and Japan's advance westward, said nothing at all with regard to a future joint offensive effort. Ugaki was keenly disappointed and concluded that, rather than attempt to co-ordinate her action with that of the European Axis, Japan could best promote overall Axis success by fixing her own strategy independently.

It may seem surprising that the Germans did not give Japan assurances about an Axis Middle East offensive in January 1942. However, at that stage of the war it was impossible for them to do so. The Russian winter offensive, although losing its impetus, had not yet been brought

to a halt and the German position on the Eastern Front was still critical. Rommel's *Panzergruppe Afrika* had been severely defeated by the Eighth Army in the winter battle in the Western Desert, and on 24 December 1941 had been forced to abandon Benghazi. Rommel's brilliant counter-attack in January-February 1942 recovered Benghazi, but was then halted by Eighth Army on the Gazala Line. It was not until the end of April 1942 that Hitler and Mussolini decided that Rommel should launch another offensive in Cyrenaica; this was to be part of the so-called 'Great Plan' designed to conquer Egypt and Persia and link up with the German offensive in South Russia, which it was hoped would reach the Caucasus in the late summer. By the time Rommel attacked the Eighth Army on the Gazala Line on 26 May 1942, the Japanese were committed to a totally different strategy. It therefore appears that Rommel's defeat in the Sidi Rezegh battles in November-December 1941 was of great importance to the whole course of the war. If Rommel had been victorious in that battle, the Germans would have been able to promise Japan in January 1942 a large scale offensive in the Middle East, aimed at linking up with the Japanese on the shores of the Indian Ocean. In that case, Japan might well have decided on an Indian Ocean offensive in preference to the plans which eventually led to the Battles of Coral Sea and Midway.

Although the conception of a joint German-Japanese offensive was abandoned at Imperial Headquarters, the Combined Fleet staff continued to consider operations in the Indian Ocean as a purely Japanese project. By late February studies had been completed and a provisional plan had been worked out. The objectives were the destruction of the British Eastern Fleet, the conquest of Ceylon and the achievement of air control over a large part of the Indian Ocean. In mid-March a conference on the subject was held at Imperial Headquarters. The Japanese Army strongly objected to the Navy plan, which envisaged amphibious landings in Ceylon and the use of a substantial number of troops. Fuchida and Okumiya state (p. 70):

The Army . . . voiced strong opposition on the ground that it had to be on guard against the Soviet Union and therefore could not afford to extend itself any further in South East Asia. From the Navy viewpoint, this argument appeared somewhat specious in view of the Army's current operations in Burma; but specious or not, the Army's refusal to co-operate meant that the proposed offensive in the Indian Ocean could not be carried out.

The Naval Staff therefore decided to launch the purely naval and limited operation against bases in Ceylon and in the Bay of Bengal,

which have already been described. It also resumed planning for operations in the Pacific, and more particularly for a thrust at Midway Island. By the end of March Admiral Yamamoto, the Commander-in-Chief, had decided that the next major operation of his fleet would be in the central Pacific. Midway was to be attacked in order to draw the American carrier squadron into a decisive battle.

Meanwhile the Japanese Naval Staff in Tokyo was also working on alternative offensives. Rear Admiral Fukudome of the Plans Division and his chief staff officer, Captain Tomioka, took the view that Australia should be the primary Japanese objective. They believed that an American counter-offensive would sooner or later use Australia as a springboard. Fuchida and Okumiya state (p. 72):

Following the easy conquest of the Bismarcks in January, the most aggressive proponents of the Australia-first concept started advocating outright occupation of key areas in Australia. This extreme initial proposal, however, was speedily rejected by the Army, which flatly stated that it could not scrape together the more than ten combat divisions that would be required for such an operation, not to mention the impossibility of amassing enough ships to transport such a force and keep it supplied.

Regarding the objections made by the Japanese Army, the Australian official historian, Douglas Gillison, quotes the following comments of Colonel Hattori, then Chief of the Operations Section of the Japanese General Staff (p. 524 n):

If Japanese troops tried to invade Australia it must be expected that the patriotic character of the Australians would mobilise the whole nation at the defence line. Twelve divisions would be needed . . . to change the pre-arranged programme . . . and . . . conduct an immediate invasion of Australia, which is about 4,000 nautical miles away, with military forces far exceeding the total of all troops ever employed in the Southern Region since the outbreak of war, would be an exceedingly irresponsible operation . . . The Army could never assent to it.

David Sissons states that in May 1942 Japanese Intelligence estimated that there were 350,000 troops in Australia, including ten operational divisions. To transport twelve Japanese divisions to Australian waters and to maintain such a force after a successful landing in eastern Australia would have required 1,500,000 tons of shipping. The Japanese mercantile marine was quite incapable of providing the necessary vessels. But apart from these logistical considerations, the Japanese General Staff was extremely reluctant to make military forces available for operations in Australia or Ceylon. Their basic objection was that this would involve weakening their armies in China and Manchuria. The Japanese Army always tended to rate German military strength very highly. They knew that the Germans were preparing a tremendous offensive against Russia for the summer of 1942, and they thought it



quite probable that the Red Army would collapse before the onslaught. In that case the Japanese Army would launch an invasion of Siberia in order to occupy as much territory as possible, before it could be overrun by the Germans.

The Japanese Naval Staff was therefore compelled to plan operations under the overriding consideration that very few Army troops would be available. The concept of invading Australia was set aside, but as an alternative it was proposed to cut the main shipping routes between North America and Australia. By early April the Army and Navy General Staffs had agreed that as a first step military and naval forces would be provided by the South Seas Detachment, based on Rabaul, which had occupied Lae and Salamaua on 8 March. Naval covering forces of cruisers and destroyers based on Truk would be supported by two fleet carriers from Admiral Nagumo's squadron. This plan, decided upon early in April, provided the genesis of the Battle of the Coral Sea.

In the event of a successful occupation of Port Moresby and Tulagi, the Naval Staff proposed to the Army that further invasions should be launched against New Caledonia, Fiji and Samoa in order to sever the main allied lines of communication across the Pacific. It was at this stage in early April that the staff of the Combined Fleet submitted Admiral Yamamoto's demand that the main effort should be made against Midway Island. At conferences in Tokyo between 2 and 5 April acute tensions arose between Admiral Yamamoto's staff officers and the representatives of the Naval Staff. In particular Commander Miyo sharply criticised the plan for attacking Midway, which he characterised as 'a very dangerous operation'. He did not think it would be possible to achieve surprise, and he anticipated a violent reaction by American carrier and shore-based aircraft. As an alternative, Miyo pressed strongly for a thrust against New Caledonia, Fiji and Samoa, which in his view would not only yield valuable strategic results but would draw the American carrier squadron into battle under very disadvantageous conditions. However, in view of the adamant objections of Admiral Yamamoto, the Naval Staff reluctantly agreed that the Midway operation should have first priority.

The attacks on Tokyo and other Japanese cities by American bombers flown off the carriers *Hornet* and *Enterprise* on 18 April provided further endorsement for Yamamoto's view that Japan must seize Midway and gain a foothold in the Hawaiian island group. Prepara-

tions were set on foot for a gigantic operation involving all major units in the Japanese Navy. The operation against Midway was to be launched in early June, but it was agreed that as a preliminary the thrust against Port Moresby and Tulagi, and the incursion of two Japanese carriers into the Coral Sea, should be made in early May. Such an operation would not only secure useful stepping-stones in the South Pacific but might draw some American aircraft carriers into battle. Even in the event of a victory in the Coral Sea, further Japanese operations in the South Pacific would have been suspended until after the Midway enterprise was concluded. If this had been successful, Combined Fleet would then have covered the invasions of New Caledonia, Fiji and Samoa. An invasion of Australia was not contemplated, but heavy attacks with carrier-borne aircraft would have been made on Sydney.

It is not proposed to describe the Battle of the Coral Sea, which has been dealt with very thoroughly in the official American and Australian accounts.

From the Japanese point of view it was a purely subsidiary operation, and there is of course no truth in the legend that the battle saved Australia from invasion. The Japanese succeeded in occupying Tulagi, in the south-eastern Solomons, but failed to capture Port Moresby. The landing force and naval bombardment groups for the Port Moresby operation were supported by a Striking Force, including the fleet carriers *Zuikaku* and *Shokaku*. They clashed with the American Task Force 17, which included the fleet carriers, *Lexington* and *Yorktown*—the first battle in history between rival carrier forces and hardly a model of its kind. In this confused and very muddled operation, fought between 5 and 7 May, the balance of losses favoured Japan. The *Lexington* was sunk and the *Yorktown* damaged, against the loss of the light Japanese carrier *Shoho* and severe damage to the fleet carrier *Shokaku*. The Americans lost 66 planes to the Japanese 77. On 8 May the Japanese cancelled their amphibious attack on Port Moresby, and for the first time in the war the Imperial Navy turned back from a major objective. Fuchida and Okumiya comment (pp. 116-7):

Thus, if the Coral Sea battle can be said to have been a Japanese victory, it was a victory only by the narrowest numerical margin, even without taking into account the thwarting of the Port Moresby invasion. Certainly, the actual outcome was a far cry from the sweeping triumph which was announced to the Japanese nation over the radio to the stirring accompaniment of the Navy March.

From the Japanese point of view, the most serious aspect of the Coral Sea battle was the effect it had on their Midway operation. The

*Shokaku* was put out of action for several months, and, although her fellow carrier, *Zuikaku*, was undamaged, the losses among her pilots and aircraft had been so heavy that Admiral Nagumo did not venture to include her in his carrier squadron for Midway. Only four of the Japanese fleet carriers participated in that battle, and the absence of the *Zuikaku* may well have made the difference between victory and defeat. In contrast the Americans, by a really astounding effort, were able to repair the *Yorktown* in time for her to join the *Hornet* and *Enterprise* in the Battle of Midway.

The Japanese defeat in the crucial battle of 4 June is to be ascribed partly to the faulty strategic plan of Admiral Yamamoto, but more particularly to the strange blunders of the hitherto victorious Nagumo. The battle was won by an American fleet vastly inferior in numbers to its Japanese adversary, and was decided in a few minutes by 49 dive-bombers from the carriers *Enterprise* and *Yorktown*. Their attack on the morning of 4 June knocked out three of Admiral Nagumo's aircraft carriers, spread consternation through the Combined Fleet, and caused Admiral Yamamoto to abandon his elaborate offensive in the Central Pacific. Decisive in a strategic sense, the battle inflicted damage from which the Imperial Navy never recovered. For the loss of the *Yorktown*, the Americans sank the fleet carriers, *Akagi*, *Kaga*, *Soryu* and *Hiryu*, as well as the heavy cruiser *Mikuma*. Admiral Nagumo's carrier group, the foundation of all the Japanese triumphs in the Pacific and Indian Ocean, had ceased to exist.<sup>4</sup>

During the subsequent fighting at Guadalcanal and off the Solomons in the latter months of 1942 the Japanese Navy gained some impressive victories. But in spite of fine seamanship, a great superiority in battleships and cruisers, and Admiral Yamamoto's conviction that 'it was necessary to fight to the death in the Solomons', the Japanese could never shake off the psychological effect of Midway. The Japanese acceptance of defeat at Guadalcanal in January 1943, meant that the initiative had passed finally to the United States Pacific Fleet.

In retrospect it appears that by failing to join hands in the Indian Ocean in 1942, the Axis Powers threw away their only chance of victory. Such a move would have wrecked the British position in the Middle

<sup>4</sup> S. E. Morison, *Coral Sea, Midway and Submarine Actions*, Boston, 1949, and G. Hermon Gill, *Royal Australian Navy 1942-1945*, Canberra, 1968, Ch. 2.

The Map 'The Eastern Theatre' is reproduced by permission of the Director of the Australian War Memorial. It was published in D. McCarthy, *South-West Pacific Area*, War Memorial, Canberra, 1962, p. 37.

East and would have isolated India and China. Even more important would have been cutting of the supply route to Russia through the Persian Gulf. Germany would have laid hands on all the oil she wanted, while the Japanese war effort would have been greatly stimulated by German technical assistance. Dazzling opportunities were available to the Japanese High Command in April 1942. Their faulty choice of divergent strategic objectives dissipated their naval strength and led to ultimate disaster. Control of the Indian Ocean was a decisive factor in the Second World War, and recent developments in that ocean have underlined its vital significance in world strategy. □

#### LESSONS FROM MIDDLE EAST OPERATIONS

Montgomery too, noted the defective and inadequate training of the Eighth Army as soon as he assumed command. Instead of following his predecessor's example of trying to rectify the deficiency by juggling with organization, he set out to cure it with training, training with all the force of his energetic, explosive personality behind it. Impelled by its new commander, the Eighth Army trained as it never trained before. The result is history, history made by a *trained* army. Each in his own way, Rommel and Montgomery, both clearly demonstrated that *there is no substitute for training*.

—Colonel E. G. Keogh, *Middle East 1939-43*.

# CITIZEN FORCES IN THE 1980s--

a proposed basis for the reorganization



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## INTRODUCTION

**T**RENDS in international affairs have weakened, rather than strengthened Australia's strategic defence situation. Evidence of this can be seen from such events as:

- British withdrawals from East of Suez and the continued closure of the Suez Canal.
- The contraction of United States forces stationed in the Pacific and Indian Ocean regions.
- Indications that potentially hostile powers are seeking to fill the power vacuum created by British and American withdrawals.
- Lack of consolidation and solidarity amongst the signatories to the South East Asian Treaty Organization (SEATO) and certain other treaties.
- The enhanced strike capabilities of potentially hostile nuclear and non-nuclear strike forces against Australian population centres and key defence installations.
- The tottering, if not outright collapse, of several 'dominoes' to our near North.
- The increasing economic gap dividing the prosperous from the poor nations. We are an outstandingly prosperous country

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situated on the periphery of countries characterised by abject poverty.

- The ever rising costs of sophisticated armaments, combined with the increasing obsolescence of much of our existing equipment.
- Our continued dependence on overseas industry for major items of essential defence equipment and spare parts.

The present trained military manpower position is that we have a regular army of under 40,000, a declining CMF strength of about 25,000, some 100,000 reservists and that is about all. The RCMF and other reserves are insignificant in terms of *effectives*.

It was earlier decreed that we should plan on the assumption that Australia would be unlikely to be involved in a major war for at least ten years. This invites the comment that ten years of peace was also the basis of British Imperial Defence planning before World War II. Promulgated in the early 1920s, it was rescinded hastily in 1937. In 1939, only two years after the abrogation of the 'No war for ten years' assessment, war broke out in Europe. Within another two years Australia had a ferocious enemy hammering at her doors (Japanese air raid on Darwin February 1942). There is no need to comment further on the 'ten year rule' beyond saying that it was a device employed by politicians, not statesmen.

The factor that Geoffrey Blainey calls *The Tyranny of Distance*, in his book of the same name, continues to operate against us more severely than ever before as far as defence planning is concerned.

The purpose of this article is to study the general nature of Australian defence problems in relation to citizen participation.

It is presented in the following form:

- Two lessons from military history are cited to illustrate the somewhat different approach that should be adopted towards our present problems.
- The changed dimensions of our mobilization problem in relation to a revitalised *Citizen Force* (CF) are evaluated. I have called this CF to distinguish it from the existing CMF.
- The clash between defence manpower requirements and contemporary social attitudes is examined.

- A new concept is proposed for a Citizen Force whereby better motivation and a greater mobilization potential will be achieved.
- Appropriate changes in the role of the ARA *vis-à-vis* the CF are suggested.
- Recruitment policy in relation to the CF is analysed from a wide sociological viewpoint.
- A number of miscellaneous changes are recommended.

These measures are intended to achieve:

- A numerically greater CF and CF Reserve by the 1980s.
- A socially significant contribution to the basic quality of life in some of the most deserving age groups in the community.

## TWO LESSONS FROM HISTORY

In researching this study I soon discovered that the history and traditions of the British or other Commonwealth armies do not provide a suitable model. The United States Army was also built up from an equally different set of historical circumstances. The various armies of continental Europe provide much more relevant material.

In the nineteenth century the governments of the many rival nations in Europe needed to be able to call upon large reserves of trained military manpower in a war emergency. It was such an urgent matter that some of them even had separate ministers responsible for mobilization measures.

At the beginning of the nineteenth century, Prussia, the most powerful state in eastern Europe, stood in the way of Napoleon Bonaparte's ambition to conquer Russia. In order to secure his northern flank Napoleon defeated the Prussian Army at Jena in 1806. Napoleon then imposed a ceiling strength of 42,000 on the Prussian Army under the Treaty of Tilsit. This was a fraction of its previous strength. Two celebrated Prussian generals, Scharnhorst and Gneisenau, circumvented this treaty provision throughout the period known in Germany as the *Wars of Liberation* (1806-1815) which culminated in the final defeat of Napoleon at Quatre Bras or Waterloo in 1815. You will recall that Wellington referred to that battle as 'a damn close run thing'. It was the late arrival of the Prussian Field Marshal von Blucher leading an entire Prussian army that sealed the fate of Napoleon. The strength



of the Prussian army, its standard of training and discipline were nasty surprises for Napoleon. The Prussians had circumvented the Treaty of Tilsit by turning over their 42,000 sanctioned strength into a reserve; this was called the Krumper system. This system had a fair degree of complexity that need not concern us today beyond noting that a proportion of the army was transferred to the reserve as soon as it had absorbed that standard of military efficiency needed to make it useful within a short period of being recalled for war duty. Our National Service Act incorporated the Krumper system to some extent; the concept is absent in the present day CMF. Compare the Prussian position in 1815 with that of Australia in 1941. In the official war history volume entitled *The Government and the People, 1942-1945*, Sir Paul Hasluck wrote that on 7 December 1941 (Pearl Harbour) there were immediately available 132,000 troops of the AMF 'spread thinly around 12,000 miles of coast from Cairns to Fremantle'. Today, with double the population of 1939 we could just about muster the same strength as in 1941. This is hardly good enough. What is more, in the event of future mobilization we would need to raise more than twice the numbers we had in 1941.

Therefore, we need an updated Australian version of the Krumper system.

The second historical example is also taken from the German Army. Historically it is an extension of the attempt to limit German militarism. Under the Treaty of Versailles (28 June 1919), the victorious Allies sought to limit the strength of the German Army and to plug the loophole left in the Treaty of Tilsit, just described. Part V of the Treaty of Versailles contained over 40 military, naval and air clauses. The ceiling strength of the German Army was pegged at 100,000 including 4,000 officers. Compulsory military service was disallowed. A minimum period of 12 consecutive years service was stipulated, with longer periods for NCOs and officers. These provisions were designed to prevent the Germans from building up a large reserve force of military service age. In 1920 Generaloberst Hans von Seeckt was appointed Chief of this 100,000 strong army. As a peacetime CGS and trainer of men he is a military paradigm. His training directives are still models of their kind. With the blessings, if not the directions, of his government von Seeckt proceeded to circumvent the military clauses of the Treaty of Versailles. Two of his key measures are highly

relevant to our study. Firstly, he instituted a new system of leadership evaluation—it was the prototype of our present day 'Psych' processing. Secondly, to compensate for being restricted to having only 25 per cent of what he thought was the minimum force needed for the military security of Germany he made no attempt to train his 100,000 within the rigid framework of a field force type order of battle. *Instead, he set up a system of training designed to produce up to 100,000 leaders capable of exercising command two ranks higher than the rank actually held.* At that time, the early 1920s, General von Seeckt had to compete with a major economic post-war boom throughout Germany. He was restricted to volunteers under the rigidly enforced terms of the Versailles Treaty. Despite these limitations he was never short of recruits. Von Seeckt's carefully selected recruits were given a minimum period of basic training — a few weeks. Subsequently, based on their initial psychological aptitude tests, validated by actual troop performance, they were put through a series of courses designed to develop both leadership skills and military proficiency. Training for command 'two-up' (two ranks higher) was the predominant theme. Von Seeckt's leadership training policy provided the best possible basis for the expansion of the German Army ordered in 1935, when Hitler repudiated the Treaty of Versailles.

I am not suggesting that we in Australia should attempt to create either a military society or a nation-in-arms. What I do suggest is that the average German soldier was better trained and had a better chance of survival in 1939 than the Digger had. We are all aware of what happened to some of our militia units in 1942 in New Guinea. We tend to overlook that the magnificent performance of the 2nd AIF in the Middle East was not due to our mobilization concept of 1939. It is attributable to the long period of post-mobilization training that we were fortunate enough to get during the 'phoney-war' period that lasted from September 1939 until the middle of 1940.

Three preliminary deductions follow from these historical examples:

- The need for a clearly defined mobilization policy.
- Mobilization implies the assembly, equipping, organization and supplementary training of several hundred thousand trained reservists.

- Peacetime training should aim to train as many men as possible to fit them to take up senior NCO and 'middle piece' officer ranks in the event of mobilization.

### **THE CHANGED DIMENSIONS OF MOBILIZATION**

It is important to realise that the dimensions of mobilization have changed.

Here is another quote from Sir Paul Hasluck's book, already cited:

Some understanding of the contribution made by Australia to the winning of the war may be gained from the fact that about 550,000 service men and women — one in twelve of her population of approximately 7 million — served outside Australia.

Another author has estimated that 10.28 per cent of the population served in our armed forces during World War II. This is a higher percentage than in either the USA or Japan.

The next mobilization will be very different from last time because we now have a sizeable regular army — which was not the case in 1914 or 1939. Furthermore, the nature of modern warfare has changed. It requires a far more flexible response and a higher level of preparation for battle. Thirdly, as mentioned, the size of the problem has become immense. It is very important that we should visualise this mobilization in practical and realistic terms. Our mobilization concept will impart the shape, size and form of the CF and a large part of the ARA in peacetime.

While we can expect the ARA field force (plus, eventually the CMF Ready Reaction Force) to be able to cope with the 'brush fire' type of war expected during the next ten years, it is our duty to look further ahead and to be ready to meet a full mobilization requirement.

With double the population today, and anticipating a strategic situation that could be even worse than 1914 or 1939, it is reasonable to state that we would need to mobilize at least a million people to fight another major war. This is obviously a problem of vast size. It implies the need for a large reserve of NCO and officer leaders. It also carries the inference that the womens services would be far larger. Today women are forming an increasing proportion of the civilian work force.

Against this background, the question arises: What changes, if any, are advisable to enable the CMF to fill the needs of national defence in the event of mobilization?

Our future mobilization requirement may be divided into five clearcut segments. These are:

- **Segment I — Industrial Mobilization.** This is beyond the scope of this article except to point out that anyone employed permanently in a reserved occupation obviously has limited mobilization use.
- **Segment II — Holding Operations by the Existing Field Force.** This is obviously an ARA task. It is worth commenting that the extent of the ARA's initial operational involvement will limit both the quality and the rate of new raisings under any mobilization programme.
- **Segment III — The Raising of a Balanced Field Force of All Arms.** Primarily an ARA responsibility but a previously earmarked element of the CF would march out to join it (eg, The Ready Reaction Force). The first phase of raisings might be one field corps of three to five corps of three to five divisions, plus army troops strong in *Australian made* tanks, artillery, air and missile elements.
- **Segment IV — The Australia-wide Establishment of Personnel Depots and Basic Training/Refresher Schools for All Arms and Services.** With 'two-up' training on the von Seeckt model and having adequate numbers turned over on my version of the Krumper system the re-vitalised CF should be well suited to take on this task under the higher direction of senior ARA commanders. The present CMF could not undertake this important mission.
- **Segment V — Provision of a Large Range of Logistic Support Units.** The remarks made against Segment IV apply, except that the CMF has a useful capacity in this regard at present.

There is no need for traditionally named and numbered ARA or CMF units to be lost in any reorganization or even on mobilization. However, their roles in peace would change under the CF concept put forward later in this article.

### IS THERE A NEED FOR CHANGE?

The value of any military organization is retained for only as long as it remains capable of responding to sociological and technological

change. Military history abounds in examples of strategic and tactical defeats occasioned by ignorance or disregard of these two key considerations.

The CMF was re-vitalised after World War II. It remains modelled on the pattern followed between the two world wars — that is to say, a part time force offering a long service alternative career to a limited number of enthusiasts. However, most of the post World War II considerations and social attitudes that led to the present CMF have changed.

These changes include:

- A population double that of 1939 — 14 million, as already mentioned.
- Potential recruits — or, for that matter, their parents — were either born or brought up after World War II.
- Potential recruits have a wide range of highly attractive alternative ways of spending their time.
- There is a dearth of volunteers from the community that used to supply adequate numbers of well motivated part time soldiers.
- The number of ACMF officers and senior NCOs with battle experience is dwindling.
- New attitudes in the general public sometimes fail to take account of the nature of Australia's defence vulnerabilities.

The following deductions follow:

- What remains of the CMF is in danger of getting out of step with whatever is acceptable in the minds of those age groups that we would like to see as Citizen Force volunteers.
- Any plan for re-vitalising the citizen defence of Australia must take full and complete account of all factors motivating present day youth.

Some of the measures proposed in the past to make CMF service more attractive were:

- Triple or quadruple rates of pay for weekend duty. This is a United States practice.
- Increased, cumulative efficiency grants.
- Terminal gratuities.

- Pensions for long service, again a United States practice.
- Legislative or administrative action to meet the nations requirements.
- Reliance on motivating employers.
- A new appeal to patriotism.
- Higher rates of pay with increments for length of service.
- Linking military service with civil defence, disaster relief, fire prevention and other socially orientated activities.

Some of these courses have their own individual merit but *not one of them, nor any combination of them, would lead to that level of sustained volunteer leadership that we require in relation to future mobilization.* Therefore, it is necessary to propose an entirely new concept.

## **AN OUTLINE OF A PROPOSED NEW CITIZEN FORCE**

### **General**

The main features of the new Citizen Force concept proposed in this article are:

- A realistic assessment of the hopes and aspirations of the youth of today.
- Correct identification of 'Citizen Force Types' and the main social influences affecting them.
- Use of social means to achieve Citizen Force ends.

### **The Youth of Today**

Today's young Australian is not significantly different from his recent predecessors. In the case of migrants, their children show indications of merging satisfactorily, even if some of their parents remain on the outer. Young Australians are every bit as proud of their country as we are — if they weren't they wouldn't bother to be so highly critical and exacting over all things Australian. At a more superficial level, however, there are several significant differences. When they are single, today's kids have lots more money to burn than we had. You name it, they want it. And they want it here and now.

Other changes are a tendency to marry younger, the preference for setting up their own independent household at the time of marriage,

or soon after, and a tough economic battle to keep up with what has been called 'today's high cost of loving'.

Today's young married couple demand every comfort they enjoyed in their parents' home. But, the means are lacking. Before long, the wife decides to go out to work. A little later, the husband takes a second job. If the couple go in for a second mortgage and extensive hire purchase the young husband will soon be taking on a third job at weekends. The extra money he earns is far more than anything the Citizen Force could offer in ready cash terms. Before much longer economic stress and physical exhaustion combine to interfere with the couple's personal relationship. Most sociologists will agree that domestic economic stress amongst young married couples is a common predisposing factor making for the early breakdown of contemporary marriages.

### Identifying 'Citizen Force Types'

What sort of person do we want in the Citizen Force? We are looking primarily for *good leadership potential*. One of the types that we want is what you might term the 'homebuilder'. He is in his late 'teens or early twenties. He is probably married or engaged to the sort of girl who values a good home. He and his wife have a sense of responsibility towards their parents and a common determination to raise their children in the best possible way. *This is the very same sort of man that makes a good, responsible senior NCO or officer leader.* This is one of the main types that we want. However, as things are at present, his young wife will not tolerate his part time soldiering while she works overtime controlling the kids. An efficiency decoration or promotion prospects in the dim future means little to her — and perhaps not very much to him either. Today, young people seek real, tangible goals that are clearly attainable after a few years of effort. The reduction of the qualifying period for long service leave is a very recent example of this.

To get this type of person in, the government has to come to the party in two main ways. First of all it has to push home to the general public the need for the citizen defence of Australia in terms that are credible to young people. Secondly, it should adopt what I call the Liddell Hart strategy of indirect approach to impart real meaning to our recruiting campaign. An example could well be the immediate introduction of a low interest, long term, Citizen Force home loan scheme

as a final reward for Citizen Force service. An article on this appeared in the *National Times* of 12 June 1972. A proposal of this type would appeal strongly to the sorts of Citizen Force recruits that we want. What is most important, is that a home loan will also appeal to the young wife of the citizen soldier.

A housing loan is not a panacea in itself. I have mentioned the social resistance to long, continuing commitments. This factor coincides with my military analysis of our Citizen Force requirement: *We require selected, potential leaders to train for something between five and eight years on von Seeckt principles of training leaders two up. This should be followed by a period in the Citizen Force Reserve, along the lines of the old Krumper system. Young people are far more likely to accept an obligation of defined duration. Employers will also be far happier with a definite and shorter period of service.*

Von Seeckt had 100,000 volunteers. We probably need to recruit between 15 and 20,000 potential leaders. The target is realistic in terms of numbers as well as period of service and this satisfies military requirements and makes domestic circumstances acceptable. After serving an initial period of their Citizen Force obligation they should become eligible for a housing loan.

Once you start examining this principle of two up leadership training, other types of Citizen Force volunteer come into view. Another type of person needed is the successful business executive who is still in the right age group. So, why not offer potential senior officers a special short course of training and/or refresher courses and commission them in senior ranks in the Citizen Force reserve of officers? This measure will attract an important segment of the business world. At the same time, we must offer *concrete incentives to employers* to induce them to encourage their employees to join the Citizen Force. There are a number of ways that this can be done. I haven't the time to enumerate them but if we can devise means to promote exports, why can't we do the same to secure more employer support for the Citizen Force?

Another important Citizen Force type is the sub-professional person, the foreman or supervisor. They are potential sergeants and warrant officers and should be recruited at the level of corporals or sergeants from the outset.



Other avenues of recruitment for Citizen Force could be found from the trained managers, (in all their forms), training officers, personnel officers, foremen and leading hands to name but a few from industry, and from the professional and semi-professional ranks of commerce. The Army has a lot to gain from this type of recruitment. It stands to gain a qualified person in disciplines or trades that are applicable to the Army, to whom it can then impart Army skills. This would achieve two major break throughs. Firstly it would save the Army long training lead times. Secondly it would involve industry and commerce intimately with the Army.

I could go on suggesting other types on a comparable job analysis basis, but there isn't time. However, one other fine Citizen Force type deserves special mention because of their existing excellent high standard of service. I refer of course to the WRAAC. More and more women are joining the civilian labour force. Therefore, the WRAAC ceiling should be increased. At the same time their role should be broadened. For example they might well be recruited side by side with men for training in Signals, Medical, Transportation and other units.

There will be a continuing requirement for *selected* Citizen Force officers to serve longer than five or eight years. In my view there should be a greater intermeshing and integration of this long service Citizen Force element and the ARA. Over a period of years, the long service Citizen Force officer should attend senior ARA courses, work as Commanders, Deputy Commanders, Chiefs of Staff and other senior staff appointments so that they will become competent to fill senior appointments on mobilization.

### **Social Means for Citizen Force Ends**

One of the reasons why we have been floundering around looking for a solution to CMF problems is that we did not regard the problem as being primarily sociological. Once you accept this premise and apply it to present day individual and family group situations, as I have done in this presentation, then the whole picture of what is required to make citizen defence effective, in the 1980s falls into proper perspective.

The picture that emerges is:

- A number of Citizen Force training units established to develop those military skills required on mobilization.

- Existing CMF training establishments, such as the OCTU, remain with an extended role.
- The existing concept of a CMF Order of Battle resembling the ARA would disappear with the exception that traditional units would retain their historical identity however their role would change. Some of them would form the nucleus of a small force (Ready Reaction Force) with strong training affiliations with the ARA.

The role of the ARA in CF formations and units also requires a complete overhaul. To get the best out of any soldier of any rank, from private to general, you have to spell out to him a clear cut, unequivocal operational or training task or mission. Possibly through force of circumstances, the role of ARA cadre staff serving with CMF units has degenerated into a mere administrative function in many cases. This has killed interest. It arouses opposition to being posted into a CMF unit. Sometimes it acts as a divisive factor between men who wear the same uniform and belong to the same unit.

There are a number of measures that might be taken to remedy this situation but, before mentioning them, there is one that we should *not* adopt. It is what I refer to as the 'Eric St. Johnston' Syndrome. Unhappily, it afflicts many of our national and state institutions. There is no place for it in any ARA/CF reorganization on account of the sociological reasons already put forward. What do I mean by the 'Eric St. Johnston Syndrome'? Well, Sir Eric was the eminent foreign policeman gentleman who came all the way to Victoria at great public expense — to convince us that we should adopt a number of measures long advocated by senior officers of the Victorian Police Force. We wasted a lot of money over matters that, by definition, had to be evaluated from within the framework of our own society. We have enough built in expertise in the ARA and the CMF. We should take full account of the practices of other armies but we do not need outside advice on a matter that penetrates deeply into the fabric and structure of our own society.

Increased ARA representation within the CF is recommended but on the basis of a clearly defined training role, every major CMF unit should have a field rank ARA officer graded as 'fit for command in due course'.

The quality of ARA training teams — both from AHQ and at Command HQ levels — is good. There should be more of them. They should be sufficient to train all CF NCO and some officer instructors. They should be able to handle the writing, rehearsal, control and umpiring of major CF or combined ARA/CF manoeuvres in conjunction with CF staff. Consideration should be given to the establishment of ARA staffed training centres in every State to cater for a wide range of CF training requirements from basic CF recruit training to officer promotion examination coaching. These centres should be Training Command units commanded by an ARA Colonel.

There should be closer liaison and affiliation between ARA and CF units. Now that we have all nine ARA battalions underposted, we should affiliate a number of CF units and sub-units to each battalion.

We should study the New Zealand system of rolling or alternating territorial-regular command-2IC appointments. This offers one way of compensating for the lack of battle experience that becomes increasingly apparent with every successive batch of CMF officers taking up studies for their Tac 3 and Tac 5 boards. I can see no valid objection to an alternating system of command at higher levels also. There should be senior ranking CF officers in every Command HQ to learn from and deputise for senior ARA officers. At AHQ the CMF Member needs to have a more self-sufficient and dynamic secretariat and this will be discussed further in a separate article.

Suitable CMF officers should be offered vacancies at the Staff College, subject to qualifying in the ARA examination. Vacancies should also be offered at the Joint Services Staff College, the National Defence College, if and when formed, and other selected courses. I expect Drs Millar and O'Neill would welcome one or two ARA or CF officers seconded to their institutions to make specific studies into defence problems affecting the ARA or CF.

## **OTHER RECOMMENDED CHANGES**

### **Army Cadets**

In general, Army Cadets need better equipment, improved staff, more effective liaison with the ARA and the CF and more interesting training along Outward Bound lines. One of the big 'let-downs' in the life of a keen cadet is the day he finds that he has to start all over

again in the CF. There should be a special conversion course for the better cadet to fit him for quick promotion to lance corporal or better from the time he transfers. CF/ACC liaison should be encouraged.

### **Fire Power Demonstrations**

To compensate for the lack of actual battle experience, we need a major fire power demonstration every year. This should be an ARA responsibility, possibly under the Command/District/State training centres already suggested.

### **General**

Other miscellaneous matters that are well worth investigation and study with a view to their implementation include:

- More emphasis on sports and annual competitions, including Athletics and skill-at-arms.
- Improved messing and club facilities for Other Ranks.
- Occasional, suitable social events so that the families feel sufficiently 'involved'.
- Reorganization of the WRAAC with a view to closer integrated employment and extension of its role in peace and war.
- Changes in equipment scales whereby more equipment required for headquarter and signals exercises would be made available.
- Administrative streamlining. The suggestions made by two young officers of the Victorian CMF are a good example of the sort of improvements that could be made.<sup>1</sup> The sooner personnel documentation gets onto a computer basis the better; it consumes a lot of man hours at present.

## **CONCLUSION AND RECOMMENDATIONS**

In 1971 Professor Michael Howard, Professor of War at Oxford University and a leading military historian, came to Australia as a Visiting Fellow. He addressed the Staff College at Queenscliff and participated in seminars at the Universities of Melbourne and Monash. Michael Howard reasoned that the so-called heroic age of the military in Western democratic society that began about 1870, is now almost

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<sup>1</sup> Ringe, Captain R. A. and Swift H. D., 'Towards a CMF Revised'. *Army Journal* No. 279 August 1972.

extinct. This contrasts sharply with communist countries and many new countries of the 'third world'. Michael Howard went on to state that, in view of this decline in popularity, the interests or even the survival of professional armies might well depend on the way they interact with the community at large. In this context citizen forces take on new social significance, *provided always that they remain representative of the general community*. He stressed the importance in any country of ensuring that the military do not become isolated.

In extension of this theme, it is suggested that we need to make a thorough and professional survey of contemporary attitudes towards the national defence of Australia. It should take in all age groups and people from every walk of life. This survey would become a prime term of reference for both the ARA and the Citizen Force. In the absence of an authoritative document of this nature, we see a fairly wild proliferation of conflicting ideas, but no clear indication of the most promising avenues that need to be explored.

We need a clearly defined mobilization policy from which we can work — using similar mechanics, to those for working out a D Day calculation or a night attack H Hour — in order to plan a flexible training system that will eventually yield many thousands of trained reservists, all of them leaders. Training should be orientated around the development of Citizen Force volunteers selected for their leadership potential, and not the maintenance of a field force order of battle.

Australia's strategic position poses greater defence problems than ever before. Future mobilization will be on so much larger a scale that it renders obsolete the pattern followed for the 1st and 2nd AIFs.

The CMF continues to remain understrength. Many of the conditions under which it was formed have become obsolete. There is clearly a requirement for a re-vitalised force to be called the Citizen Force or CF. Any plan for raising a CF must take account of contemporary, societal phenomena, soundly evaluated by a competent social survey.

CF reorganization requires meticulous care and deliberate execution along the lines of a military operation controlled at every level and through all stages by an expanded and reorganized secretariat.

Two major mobilization roles were suggested for the CF: training expansion of basic training units and manning of various logistic units. The identity of traditional units should be retained although their

role might change. To meet the vastly increased size of our mobilization problem, we require a pool of leaders trained in a range of military skills.

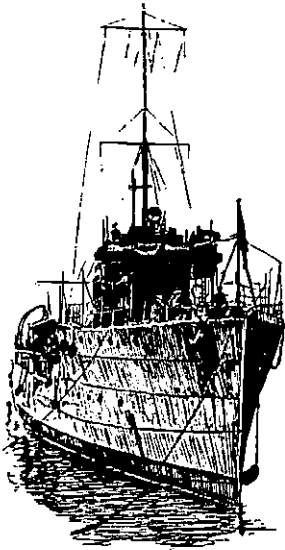
Instead of a long service CMF, there should be a new Citizen Force whose members will serve for a number of years until they attain the required level of military proficiency. These members will be recruited for all rank structures. On completion of their training, the majority of these trained Citizen Force leaders should be transferred to the Citizen Force Reserve. This Reserve will build up to many thousands over a period depending on annual intake, the climate of public opinion and response, the country's needs and similar factors. The introduction of a low interest, long term housing loan was emphasised. It would provide the vital incentive need in CF manpower planning and motivate both the citizen soldier and his spouse.

The reserve of Citizen Force officers should include senior businessmen, technical experts and prominent members of a variety of professions. This Citizen Force type would be trained and ready to assume both specialist and field command appointments in the ranks of Colonel, Brigadier and higher.

This has a number of far reaching implications. It will:

- Attract a highly effective type of senior business personality, many of whom will have high standing in the community.
- Serve to preserve and extend the links that regular forces must maintain with the general community.
- The example of senior executives would motivate junior ones and the rest of the work force to join the Citizen Force.

Courses for this reserve of potential senior Citizen Force officers should be tailored to suit their age, availability and existing high levels of training in their civilian roles. A new type of training centre should be established by Training Command in every state to cater specifically for a wide range of CF training needs. It should be staffed primarily by ARA under an ARA Commandant. A number of other changes to the role of the ARA vis-a-vis the CMF were recommended. □



# ***From Commission Via Conference To Collaboration***

*Major J. V. Johnson  
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**T**HIS paper traces the development of Imperial Defence planning and control from the 'Carnarvon Commission' to the outbreak of the Great War, surveying the role of the United Kingdom and the relations between the motherland and the self-governing colonies and the part played by Conferences of these nations in the formulation of the Defence Policy.

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From about 1870 onwards the British Empire was faced by an increasing risk of being involved in a large-scale war in which the use of troops in extensive offensive operations against a European army

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would require the augmentation of local manpower and reserves from colonial resources.

Until this time, most defence planning had been centred on India and the Royal Navy had been seen as a means of protecting oceanic commerce and being employed as a local defence unit in home waters:

The colonies had used local troops mainly for the suppression of local native wars and for the control of tribal affairs.

The withdrawal of Imperial troops—primarily for reasons of economy at home<sup>1</sup>—had helped to develop an assertive nationalism in the colonies, which was often tinged with a suspicious fear of Imperialism and a contradictory fear of being isolated and forgotten, particularly in the case of Australia.

John Colomb, a leading defence theorist of the time, in his book *The Protection of our Commerce and Distribution of our Naval Forces*, suggested that the priorities for defence should be first, the protection of the United Kingdom; second, the protection of British commerce at sea, and third the continued occupation of India.<sup>2</sup> Colomb also recognised the potential value of the Empire, but acknowledged that a problem would exist in establishing collaboration between colonies and homeland, as it would be necessary to balance colonial nationalism and British leadership and authority.

This realisation that the colonies had a potentially positive contribution to make in time of war, together with the realisation that the steam ship had reduced the margins of imperial security (by reducing the effectiveness of the traditional blockade) led to a need to carefully re-appraise the defence thinking of Great Britain.

The 'Russian Scare' of 1878 served to further accelerate the need for constructive planning. The fear that Russian warships might make raids on Imperial coaling stations such as the Cape and Singapore eventually led to Sir Michael Hicks Beach (then Colonial Secretary) asking Lord Carnarvon to become the chairman of a 'Royal Commission to inquire into and consider the state of affairs of the defences of British commerce and possessions abroad'.<sup>3</sup> He suggested that member-

<sup>1</sup> Gordon, D. C. *The Dominion Partnership in Imperial Defence 1870-1914* (Baltimore, 1965) p. 63.

<sup>2</sup> *ibid.*, p. 59.

<sup>3</sup> 26 July 1879.



ship of such a Commission should include a distinguished Colonial leader, but this did not eventuate.<sup>4</sup>

The Commission duly reported that the maintenance of safe coaling stations for the navy was of paramount importance in the overall defence of the Empire, and recommended that, as the Royal Navy was to defend the trade routes of the Empire, the Colonies should contribute to this task by assisting in the defence of bases and coaling stations within their territories. The 'richer Colonies' might 'not unreasonably be called upon to assist in some degree in the naval defence of the Empire,'<sup>5</sup> and care was taken to emphasise that such contribution did not imply any colonial control over such forces. The Australian Colonies especially 'may reasonably be expected to take upon themselves some share of the defence'.<sup>6</sup> The Commissioners further recommended that the separate Colonies should be levied towards the cost of such a squadron as their per capita contributions to defence were all under half a crown — and Western Australia paid nothing at all — as opposed to the United Kingdom's 15s. 7½d.<sup>7</sup> Carnarvon, in fact, privately hoped that the Australians would 'for their own sake, provide the necessary defences and we shall get the benefit of them'.<sup>8</sup>

The significance of the Commission to Imperial Defence lies in the fact that it looked at the question as a whole, overriding service and departmental rivalries in so doing. Although it certainly emphasised the central role of sea power and the navy, by its systematic accumulation of invaluable information both naval and military it can be considered to have been the first and most important step towards a centralized defence organization for supervision of colonial defence measures on an inter-service basis.

Whilst the only concrete results of the Commission's findings were proposals to fortify key coaling stations, the Soudan campaigns of 1884-5 clearly displayed the way in which troops from England, India and Australia could be swiftly concentrated at a 'trouble spot' provided that adequate naval protection could be maintained. The voluntary

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<sup>4</sup> *ibid.*, p. 63.

<sup>5</sup> *ibid.*, p. 64.

<sup>6</sup> Tunstall, W. C. B. 'Imperial Defence 1870-1897' in *Cambridge History of the British Empire Vol. III* (Cambridge 1967) p. 233.

<sup>7</sup> *ibid.*, p. 233.

<sup>8</sup> Preston, R. A. *Canada and 'Imperial Defence'* (Durham N. C., 1967) p. 92.

inclusion of a small contingent from New South Wales — two batteries of artillery and five hundred infantrymen<sup>9</sup> — helped to reveal the military potential (at last in terms of money and manpower) of the Empire.

1885 also saw the emergence of a new class of cruiser in the Russian Navy (the *Rurik* class) which was apparently designed to make depredations on coastal shipping and towns. A demand from the colonies for both increased sea power and better shore defences to meet this threat led to Robert Meade (then Under Secretary for the Colonies) to suggest the formation of a small 'clearing' committee to consolidate and co-ordinate the reactions of the Colonial Office, the Admiralty and the War Office for dealing with these matters. Membership of this Committee, to be termed the 'Colonial Defence Committee' included the Under Secretary, the Inspector General of Fortifications (War Office), the Assistant Director of Artillery (War Office) and the Chairman of the Admiralty Foreign Intelligence Committee.<sup>10</sup> Subsequently, a representative of the Commander in Chief (HRH the Duke of Cambridge) was appointed.

The Committee was a relatively permanent body and combined both the services and the civil administration, a unique organization at the time. As a subcommittee of Cabinet it had considerable prestige and, interestingly enough, actually took over the old manuscript minute book of the Carnarvon Commission<sup>1</sup>, thus fully acquainting itself with the valuable research records of that body.

The main tasks of this committee were to furnish the colonies with guidance on matters of defence; to secure information on the state of colonial defences and to formulate basic principles of defence and to advise and educate the Colonial Governments on these.<sup>2</sup>

The overwhelming concern of the committee was, thus, the state of Colonial defences and, whilst it encouraged an 'Imperial' outlook it did not really solve the more difficult problem of securing colonial co-operation. Like most defence organizations of its time, however, it failed to overcome the 'dangerous tendency'<sup>3</sup> to engage in independent

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<sup>9</sup> Clark, C. D. 'Suakin 1885' in *Army Journal*, No. 248 (Jan. 1970) p. 29.

<sup>10</sup> Tunstall, *op. cit.*, p. 235.

<sup>1</sup> Preston, *op. cit.*, p. 95.

<sup>2</sup> Gordon, *op. cit.*, pp. 107-8.

<sup>3</sup> Preston, *op. cit.*, p. 95.

planning and action. It was, in effect, a 'forum for discussion and a channel for communication and advice'<sup>4</sup> but was not, through lack of staff, capable of far-reaching research or planning.

The first task that the new Committee was called upon to perform was the provision of memoranda on local defence for the Colonial Conference of 1887. It called upon all participants to supply a comprehensive summary of their defence potential, strategy and planning.

One of the main themes of the Conference was the need for closer association between colonies and motherland in defence, and Lord Salisbury in his opening remarks urged consideration of 'some form of mutual defence against aggression'.<sup>5</sup> Naval questions tended to dominate the Conference, particularly as the Admiralty was unwilling to be burdened with further financial responsibility for peripheral defences and urged the colonies to contribute more to the upkeep of the fleets which protected their floating trade.

The Australian colonies were pressed to contribute to pensions of crews, as well as the cost of training replacements for sailors posted to Australian waters and of reservists 'earmarked' for the Australian squadron.<sup>6</sup>

Much hard bargaining ensued and finally the Colonies agreed to pay interest on the cost of construction of ships for Australian waters and a fixed charge for maintenance of these vessels. After a ten year period they were to revert to British control.<sup>7</sup>

The vexed problem of command and control also arose — the Admiralty demanding unconditional, undivided control and the Colonies seeking a guarantee that the ships would not be taken away without their permission. Again, a compromise solution was reached, whereby the extra ships were to be under the flag of the British Commander in Chief but assigned to duty in Australian waters. Their employment beyond these limits was to be only with the consent of the Colonial Governments — an important concession to colonial sentiment. No reduction in existing numbers of Royal Naval ships in Australian waters was proposed.<sup>8</sup>

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<sup>4</sup> Johnson, F. A. *Defence by Committee* (London, 1960) p. 20.

<sup>5</sup> *ibid.*, p. 27.

<sup>6</sup> Preston, *op. cit.*, p. 103.

<sup>7</sup> *ibid.*, p. 104.

<sup>8</sup> *ibid.*, p. 104.

The Canadians, on the other hand, claimed that their proximity to the United Kingdom and the Home Fleet made their defence the sole responsibility of Great Britain.<sup>9</sup> Their best contribution to Imperial Defence was, they asserted, the development of their internal resources and especially the completion of a transcontinental railway.

The conference was a 'modest success'<sup>10</sup> but demonstrated the need for clarifying the responsibilities of colonies and United Kingdom in questions of defence. It set a precedent for gatherings of Colonial Premiers and for colonial contributions to Imperial Defence thus setting up the political machinery required for future, more comprehensive considerations of Imperial Defence.

The Naval proposals were formalised in the Australian Naval Defence Agreement of 1888, and were seen by the then First Lord, Lord George Hamilton, as an agreement which, 'if dealt with diplomatically, [might] lead to the Colonies contributing in other directions towards purposes of Imperial Defence.'<sup>11</sup> The Agreement thus satisfied both Colonies and United Kingdom; the Australians saw it as a contribution to their local naval defences and the Imperial Government saw it as a contribution to the overall pattern of Imperial Defence.

Imperial Defence strategy, as seen by the British, consisted of colonial contributions to the upkeep of the Royal Navy, the provision of troops to defend their own territories and Imperial installations therein and the provision of troops to serve in Imperial campaigns under British command. Implementation of such policy, however, had to be formed between the *Scylla* of colonial nationalism and the *Charybdis* of a centralist vision of Empire.

Some of the greatest difficulties in the formation and execution of an Imperial Defence policy were more interdepartmental than international or intercolonial and to probe these problems and to review the whole question of Defence a Royal Commission was set up under the chairmanship of Lord Hartington in 1889 to 'enquire into the Civil and Professional Administration of the Naval and Military Departments'.<sup>2</sup>

<sup>9</sup> *ibid.*, p. 104.

<sup>10</sup> Tunstall, *op. cit.*, p. 240.

<sup>11</sup> Trainor, L., 'British Imperial Defence Policy and the Australian Colonies 1892-96' in *Historical Studies (Australia and New Zealand) Vol. XIV No. 54* (Apr. 1970) p. 206.

<sup>2</sup> Tunstall, *op. cit.*, p. 251.

The Hartington Committee was the first serious attempt to develop an organized pattern for national security by setting up a co-ordinating council for defence, and it aroused public attention and influenced contemporary thought.<sup>3</sup> Whilst the work of the Committee had little real 'Imperial' content, and was seen more as an examination of administrative inefficiency than a search for strategy, it did however advise the 'formation of a Naval and Military Council which should probably be presided over by the Prime Minister and consist of the Parliamentary Heads of the two services and their principal advisers'.<sup>4</sup> As such, the new body, the Cabinet Defence Committee, recognized the value of interservice and administration co-operation as originally set up in the Colonial Defence Committee. However, the duties and responsibilities of this organization were never clearly formulated, it lacked a real will to work and had no permanent secretariat<sup>5</sup> and it was therefore really a qualified failure. The next step in Imperial Defence planning was the Colonial Conference of 1897.

The Conference was called to coincide with the Diamond Jubilee of Queen Victoria and, with Chamberlain as Colonial Secretary, was a very 'Imperial' affair. He saw the Conference as a way to further his 'ultimate objective of the political recentralization of the Empire'<sup>6</sup> — an Empire 'better organized by degrees both for trade and defence'.<sup>7</sup> The Colonial Defence Committee had prepared recommendations covering Colonial assistance towards the maintenance of the Navy; uniformity of arms, equipment and stores; exchanges of officers between the Colonies and Britain and of units between Canada and Britain; the establishment of Military Colleges (such as Kingston in Canada) and of ordnance factories in the Colonies.<sup>8</sup>

Chamberlain suggested a 'Council of Empire' but the Colonial Premiers, anxious to preserve the autonomy of their 'self-government' resolved that 'The present political relations between the United Kingdom and the Self-Governing Colonies are generally satisfactory within

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<sup>3</sup> Johnson, *op. cit.*, p. 29.

<sup>4</sup> Gordon, *op. cit.*, p. 119.

<sup>5</sup> Johnson, *op. cit.*, p. 34.

<sup>6</sup> Preston, *op. cit.*, p. 119.

<sup>7</sup> Garvin, J. L. *The Life of Joseph Chamberlain* (Vol. III) (London 1934) p. 28.

<sup>8</sup> Gordon, *op. cit.*, p. 133.

the existing condition of things.<sup>9</sup> This resolution ended all hopes Chamberlain might have entertained for Imperial Federation.

The Admiralty pressed for a high strategy of a single Navy in which 'Empire' fleets were to be viewed as part of a whole. This view, tactically sound, was based on the fact that Britain's main naval rivals were strongest in European waters and it was therefore logical (to the British) that overwhelming naval superiority was required to be concentrated there. This was interpreted by the Colonies to mean that they had to protect themselves and their naval bases as well as contribute to centralized naval strength at a distant vital point. This view of an Imperial Navy, financed from Colonial contributions but under British direction and control had little appeal to most of the Colonials who at this time were developing a strong national sentiment. The Australians were especially concerned with naval matters due to their insular topography and remote location. They insisted on some control over the ships within their own waters which they financed.

The Canadians, whose nation was difficult to defend at sea and harder to recover militarily were less impressed by naval argument. The Admiralty's overwhelming advocacy of the need for paramountcy of sea power was dangerous in that it tended to smother the development of infant colonial navies and also discouraged the development within the colonies of political institutions more sympathetic to the ideals of centralized naval defence.<sup>10</sup>

The situation was to undergo considerable change with the outbreak of hostilities in South Africa. The Colonies rallied to the British cause — although the degree of support varied from almost unanimous acceptance in New Zealand through general acceptance in Australia to hotly debated decision in Canada, in which Chamberlain — 'Pushful Joe' at his pushful best — and the staunchly imperialist Major General Edward Hutton (British General Officer Commanding Canadian Militia) — played almost unconstitutional roles to obtain Canadian support.<sup>1</sup>

It is not the purpose of this paper to discuss the conduct of the South African War but it is necessary to examine the impact of the War on the concept of Imperial Defence.

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<sup>9</sup> Ensor, R. K. C. *England 1870-1914* (Oxford, 1936) p. 241.

<sup>10</sup> Preston, *op. cit.*, p. 119.

<sup>1</sup> vide Garvin, *op. cit.*, pp. 529-33 and Gordon, *op. cit.*, p. 139.

It certainly led to better understanding and mutual respect between British and Colonial troops and showed that the colonies were a greater source of willing manpower than had previously been considered, and a source which might, in a greater emergency, help redress the balance of manpower against Britain in a European war.

However, the South African War was not an 'Empire' war in that the Empire was not seriously threatened at the centre, none of the Colonies outside Southern Africa were faced with aggression and the paramountcy of the Royal Navy was never even remotely challenged. Colonial participation was small — only about 40,000 compared with 50,000 from the Cape Colony and Natal and about 360,000 from Britain herself.<sup>2</sup> The Canadian General Officer Commanding, Major General O'G. Haly summed up the real importance of colonial contributions when he said that 'The chief object [of colonial participation] was to demonstrate to the world that England could not be attacked without the assailants having the colonies to reckon with at the same time, and that in the colonies there are . . . citizen soldiery forces which are to the Empire a formidable strength.'<sup>3</sup>

From the purely military viewpoint, the recommendations made in 1897 for standardizing equipment and for common training facilities for staff officers were borne out. On the whole, the lack of experience of colonial officers showed out, as did the superior fitness and greater resourcefulness of the colonial troops.

The renewal of imperial co-operation in the Boer War, the considerable display of anti British sentiment abroad and the growth of the German Imperial Navy provided Chamberlain with adequate grounds for calling a further Colonial Conference. The forthcoming Coronation of Edward VII provided a suitable ceremonial centrepiece for such a gathering of Colonial dignitaries, at which he wanted to gain approval for the raising of a 'Colonial Reserve' for imperial purposes; a re-appraisal of the Australian Naval Agreement and the creation of an Imperial supervisory body for defence purposes.

The proposal for a military reserve had already been considered favourably in New Zealand by Richard Seddon, the Premier, but when presented to the Conference, it foundered on the rocks of colonial nationalism. Chamberlain had apparently failed to appreciate that the

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<sup>2</sup> Preston, *op. cit.*, p. 264.

<sup>3</sup> *ibid.*, p. 265.

proWess of Imperial troops in South Africa would be an impetus to the colonies' sense of nationhood as well as to Imperial co-operation. Canada and Australia especially showed no desire to see their troops employed by Britain without the direct consent of the Colonial authorities. This attitude was hardened when, during the Conference, the Australian Coronation Corps was confined to barracks by a British General without their Australian Commanding Officer being consulted.<sup>4</sup>

On the naval proposals, Lord Selborne, (the First Lord of the Admiralty) advocated a strongly centralized and controlled naval force, the role of which was to be aggressive defence — seeking out the enemy, and then destroying him by an overwhelming concentration of force. Such a doctrine of mobility obviously conflicted with the Australian policy of localizing a portion of the fleet in Australian waters. Selborne foresaw this and suggested, mainly as an appeasement to the Australians, that branches of the Royal Naval Reserve be set up in the major colonies, part of the cost of which would be contributed by the colonies themselves.

This proposal, after some modification, was accepted by all except Canada. Newfoundland offered £3,000 p.a. towards a Naval Reserve, The Cape Colony £50,000, Natal £35,000, Australia £200,000 and New Zealand £40,000. In the case of the two Antipodean Dominions, half the sum was for a new, improved 'Eastern Waters' Squadron, and half for the establishment of a Naval Reserve.<sup>5</sup> Canada continued to claim that the costs of developing her internal resources precluded her making any contributions to a Naval Reserve.<sup>6</sup>

The very limited success of Chamberlain's ambitions at the Conference indicated that despite the enthusiasm shown for the Empire during the South African War the calls of colonial nationalism still could not harmonize with those of centralized Imperialism. The Conference thus marked the final and conclusive halting of centralist and Imperial Federation tendencies.

In 1904 a new centralized defence organization was set up to co-ordinate all aspects of defence. It combined three former organizations, the Colonial Defence Committee, the Joint Naval and Military

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<sup>4</sup> *ibid.*, p. 297.

<sup>5</sup> *ibid.*, p. 303.

<sup>6</sup> Gordon, *op. cit.*, p. 159.



Defence Committee and the Cabinet Defence Committee.<sup>7</sup> Its primary duty was to 'survey as a whole the strategical and military needs of the Empire'<sup>8</sup> and by its flexible membership (it had wide powers of co-optation) could bring the best expert opinion to a problem at a level below the frequently overburdened Cabinet. As its chairman was the Prime Minister its authority naturally exceeded that of the old Colonial Defence Committee. Gradually, by its association of soldier and sailor, 'amateur' politician and 'expert' serviceman the new Committee became the 'key forum of Imperial consultation upon those policies which determined the external policies of the Empire.'<sup>9</sup>

One of the clearest examples of co-operation between services and civilians can be seen in the Haldane Reforms. R. B. Haldane was Secretary for War in the Liberal Administration of Sir Henry Campbell-Bannerman which came into office in December 1905. He was a gifted amateur who foresaw the need for Imperial co-operation in a future large scale war, and gained co-operation from his Service Chiefs. Possessed of 'a powerful intellect',<sup>10</sup> well versed in administration and with a quick grasp of basic principles, he recognized that there was no basis for military collaboration other than trust in the spirit of Imperial loyalty of the Dominion populations, and when the 1907 Imperial Conference was called, he presented to it the need for an Imperial General Staff.

This body, which would be advisory only, would ensure common training of staff officers, would suggest a common conception for Colonial Militias based on reforms being carried out on the British Territorial Army, and would encourage and supervise the exchange of officers between the Dominions and the United Kingdom.<sup>1</sup>

The concept gained general acceptance by the Dominions, thus making a clear advance in defence collaboration and towards the utilization of Dominion manpower in conjunction with that of the United Kingdom in time of war.

Whilst the 1907 Conference helped to achieve Imperial collaboration for the Army, the Naval problem still remained. With the growing

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<sup>7</sup> Johnson, op. cit., pp. 45-46.

<sup>8</sup> *ibid.*, p. 56.

<sup>9</sup> *ibid.*, p. 113.

<sup>10</sup> Preston, op. cit., p. 361.

<sup>1</sup> Gordon, op. cit., p. 272.

strategic importance of communications and transport — by rail to sea ports and then by sea — and with the rapidly expanding Navy of Imperial Germany the need for another conference, of more nautical emphasis, was indicated.

The 1909 Imperial Conference was spurred on by the Naval Crisis of the same year, and was characterized by a 'singlemindedness lacking from all previous conferences.'<sup>2</sup> It was essentially the result of a sudden awareness of isolation and a fear that the accepted protection of the Royal Navy was being threatened that galvanised the Colonial Premiers and swept away other, more local considerations. A desire by the Dominions to display their nationhood by playing a greater part in the defence concept also helped to hasten their response.

The British, on their part, still considered that the Dominions through lack of experience and through remoteness from the European centres of tension were too immature to have a voice in the making of Imperial foreign policy<sup>3</sup> but realised that a 'united' Empire was vital for political and military purposes. The United Kingdom had to rely on the Empire to some extent for armed power and a change of attitudes towards Colonial participation in defence planning ensued.

Despite the fact that the Conference of 1909 was essentially a supplementary one to the main 1907 Imperial Conference it resulted in achieving more concrete results than any of its predecessors. A navy made up of 'Dominion Squadrons' was proposed — a China Squadron to include ships subsidised by New Zealand, the Australian Squadron, an East Indian Squadron and a Canadian Squadron — the latter never eventuated.

In the military sphere, the Conference hastened the Imperial General Staff's proposals for Dominion General Staffs — Australia in 1909, New Zealand in 1910 and Canada in 1911.<sup>4</sup>

The Conference confirmed the increased interest in Imperial Defence among the Dominions that had first been shown in 1907, and also cleared the way for Dominion representation at sessions of the Imperial Defence Committee, a step which was achieved in 1911.<sup>5</sup>

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<sup>2</sup> Johnson, *op. cit.*, p. 108.

<sup>3</sup> *ibid.*, p. 107.

<sup>4</sup> Gordon, *op. cit.*, p. 272.

<sup>5</sup> Johnson, *op. cit.*, p. 111.

The 1911 Conference, the last within the scope of this paper, saw considerable progress in the military field, especially with the appointment of an Australian officer, Colonel W. T. Bridges to the Imperial General Staff. This body was emerging as a most effective agency of Imperial co-operation.<sup>6</sup>

The Navy, however, was again proving to be a source of difficulty. There was still an almost total lack of co-ordination between Naval and Military commands, and the achievements of Haldane in the Army staff sphere had not been paralleled in the Navy. The Admiralty, whilst it had maintained the Australian part of the 1909 agreement had shown little inclination to further its Pacific commitments. This, together with Australian and New Zealand suspicions of Japan's new Naval might made the Antipodean Dominions unwilling to accept the umbrella of the Anglo-Japanese alliance unconditionally.

The Conference finally resolved that the Royal Navy and the Dominion naval forces were to be 'sisters' in the King's Navy, completely controlled by the parent Dominion in peace, but in time of war those parts placed at Imperial disposal were to be an integral part of the Royal Navy under command of the Admiralty.<sup>7</sup>

The period 1912-1914 saw a much increased degree of Imperial co-operation, characterised by a closer liaison between the United Kingdom and the Dominions at both civil and service levels. Through officer exchanges, service on the Imperial General Staff or with the Royal Navy the Dominion forces absorbed the historical traditions, discipline and loyalty to the Throne which, together with similarity of institutions, procedures and equipment was to result in the common service, sacrifice and heroism of British and Imperial arms in the ensuing conflagration of 1914. □

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<sup>6</sup> Gordon, *op. cit.*, p. 278.

<sup>7</sup> *ibid.*, p. 288.

# WHY IS EVERYBODY MUMBLING?



*Colonel R. H. Meyer  
Royal Australian Army Medical Corps*

**I**F a man on a construction site is hit on the head by a falling brick, the effect is immediate and often permanent. Under these circumstances we have little trouble in enforcing a 'hard-hat' rule in potentially dangerous construction areas. The worker insists on it. Yet because its onset is insidious and its impact delayed rather than immediate, the attitude of many workers to noise is to shrug it off, and to regard sensible ear protection as somehow unmanly. As a result they face years of social and personal embarrassment, and often real difficulty in communication at all levels.

Whether poetically defined by Atkinson<sup>1</sup> as 'a sound of too short a duration, like the report of a cannon; or else a confused mixture of many discordant sounds like the rolling of thunder or the noise of the waves' or in the more prosaic terms of today merely as 'any unwanted sound', noise is an environmental factor that affects every person able to hear.

The subject is one that has in recent years received increasingly more attention, and the volume of literature devoted to it is large and rapidly mounting as the realization of its importance, the application of new methods and the development of new apparatus gains momentum.

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The phrase 'noise pollution' that has recently been used in describing this very serious and all-pervading health hazard is very apt.

While in 1939 the *Encyclopaedia Britannica* was able to state with the authority of the time that no proven evidence existed that noise had any permanent effect on hearing, it has been amply demonstrated in the interval that not only does exposure to excessive sound cause temporary deafness, but that repeated or constant exposure will cause permanent loss of auditory acuity.

### EFFECTS OF NOISE

The ear was the first sound detecting instrument. It is extremely sensitive, but like all delicate instruments may be injured or damaged by abuse. It was designed to hear predators, not to listen to pop music and factory noises.

Sound vibrations received at the eardrum are mechanically magnified by a ratio of approximately ten to one by three small bones known as ossicles. These lie in the inner ear immediately behind the drum, and respond to vibrations above 800 Hz. The magnified vibrations are passed further into the interior of the ear to the cochlea, which in turn contains the Organ of Corti, a complex assortment of supporting cells, interspersed between and lying upon which are the hair cells which are the sensory end organs. The total number of hair cells has been estimated to be in excess of thirty thousand.

Each hair cell terminates on its free surface in a clump of hairs like a small bristle. Over-hanging the hair cells is a gelatinous structure known as the tectorial membrane in which the hair ends are embedded.

Vibrations of the cells caused by sound waves will cause a pull, or shearing force, on the hair cells which are attached to the tectorial membrane. It is this action which transforms the energy, which has so far been mechanical, into electrical impulses that stimulate the fibres of the auditory nerve to the brain and result in the appreciation of sound.

Although sudden loud noises may occasionally cause rupture of the eardrum, or mechanical damage to the ossicles, it is mainly the cochlea which is damaged by sound. In a severe case the cell nuclei enlarge, the cells become distorted and eventually collapse. At this stage the damage is permanent, and no treatment is of value. How

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<sup>1</sup> Atkinson E. *An Elementary Treatise on Physics*, 1902.

soon this happens depends on the intensity and duration of the noise, the amount of rest between repeated exposure and the individual's reaction to it.

Noise has many effects on man besides loss of auditory acuity, however, and these have been summed up by Reswick<sup>2</sup> as follows:

- Hearing loss, both temporary and permanent.
- Interference with orientation and co-ordination.
- Interference with communication.
- Discomfort, pain and damage to the delicate inner ear tissues.
- Fatigue, loss of sleep, psychosomatic and psychiatric symptoms; and
- Long-term cumulative impairment of physiological brain functions.

Of course, many of these effects are the result of prolonged exposure to the noisy environment. In the sphere of military medicine, while such conditions apply in certain circumstances, such as in workshops and in tracked vehicles, the greatest part of the problem concerns hearing loss, both permanent and temporary, as the result of short-term impulse waves consequent upon the firing of weapons or the explosion of pyrotechnics. As would be expected, there have been extensive opportunities throughout the world to explore the effects of such high intensity noises on hearing, and rigid programmes of hearing conservation have been adopted. A similar programme is in the process of implementation in the Australian Army.

The whole basis of such a programme lies in the fact that prevention of acoustic trauma is relatively simple provided personnel exposed to it are convinced of its importance by adequate education, and supervision is maintained.

### HEARING CONSERVATION PROGRAMMES

It is for the protection of all persons exposed to noise trauma that programmes of hearing conservation have been developed and introduced into the working environment. Although they may differ in detail, all such programmes have the following elements in common:

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<sup>2</sup> Reswick D. M., Albright J. P. and Shutts R. E. *Laryng.* 72, 2, 262; 1962.

- Indoctrination of all exposed personnel as to the hazardous effects of noise.
- Minimizing the duration and intensity of daily noise exposure.
- Defining all hazardous noise areas, and supervising protective measures in these areas.
- Issuing and correctly fitting protectors, and providing instruction on their use and care, and
- Initial and periodic audiometry and medical examinations.

### **Susceptibility**

One of the prime purposes of any hearing conservation programme is to test the worker before he starts on the job, and to compare the level so obtained with the threshold found on the same man after he has been subjected to the noisy environment for some weeks or at the most, a few months.

This comparison is made in an effort to detect as early as possible any ears which are abnormally sensitive to noise, and which if exposure is continued, may develop permanent deafness.

While the procedure sounds elementary, there are certain problems that arise, the chief among them being temporary auditory fatigue. We are all familiar with the sensation of deafness that we experience, for greater or lesser periods, after exposure to loud noise. It would obviously be unfair to take as final the result of a second test, with its implied medical downgrading, without applying compensation for a lowering of the auditory threshold that may return to normal if rested.

Most people working in a noisy environment report worse hearing on Friday after a week's work; an effect which is lessened or absent in those who wear ear protectors.

Eventually after repeated or prolonged exposure the hearing does not recover after a time lapse and permanent damage has occurred.

The danger that noise represents is its insidious nature. Many persons who have a considerable amount of permanent damage are quite unaware of the fact or refuse to recognize its early symptoms. When hearing is defective only at very high frequencies the sufferer notices very little effect, because the frequency is out of the normal speech

range. However the warning is plainly visible on audiometric testing. As the condition worsens, and the deterioration involves sounds in the vocal range, speech discrimination becomes impaired, especially in the midst of background noise. At this level the high frequency consonants are being lost, and lip reading becomes more and more important. This reliance, because it is acquired over a long period of time, often goes unnoticed by the sufferer until the disease process is well developed. At this stage of course, it is quite irreversible. At first our victim feels that everyone is mumbling. If only they would speak up, everything would be alright. This applies particularly to his family, because in the domestic environment people rarely look directly at each other during conversation.

His wife and children soon tire of continuous repetition, and often stop trying to communicate altogether. Domestic tension mounts when father turns the radio or television volume up to a level which is to him comfortable, but which is at a volume intolerable to other family members with normal hearing.

Frustration, friction and loneliness envelop him, and surprisingly enough it is not until this severe level of deafness is reached that help is at last sought. By then it is too late.

### **Methods of Hearing Measurement**

To obtain a quantitative measurement of hearing loss, many methods have been used over the years, including ticking watches, tuning forks and whispered voice. None of these is accurate enough to meet today's demands in modern hearing conservation programmes.

Today the most reliable and accurate measuring device is the pure tone audiometer, of which many modifications exist. Basically the audiometer is an instrument by which a succession of sounds of controlled frequency and volume are conveyed to each ear of the subject in turn. There are two principal methods for the conduct of audiometric testing:

- **Screening**, in which the audiometer is set to emit pure tones at a predetermined volume, for example 12-20 dB. For the mathematically minded, the decibel (dB) is defined at the end of this article.

If the candidate can hear them, he passes the test, and



- **full audiometry.** Here the threshold of volume for each individual frequency is measured. The subject is seated with earphones in position, in an acoustically suitable room or booth, and is asked to indicate by the raising of a finger when he hears a tone, and by the dropping of the finger when the tone ceases.

It is important to remember that the audiometer does not measure acuity of hearing as such, but merely compares the subject's level of acuity for tones of certain frequencies with that of the average of a number of normal ears. Many ears will thus record results better than the average zero, so provision is made to record values of  $-5$  or even  $-10$  decibel.

Investigations have shown that not only the level of sound is important in producing hearing loss, but also the length of exposure. An overall sound level of 85 dB will not cause permanent hearing loss even after repeated daily exposure for periods not exceeding eight hours. At 90 dB, hearing loss will occur if continuous exposure exceeds 150 minutes in each working day. Similarly the permissible exposure for 100 dB is 50 minutes, 110 dB is 25 minutes and 120 dB is 6 minutes.

You will have noticed that permissible exposure cannot be estimated by simple addition or multiplication. This is because decibels are logarithmic ratios. For example, if two machines each of which produces 73 dB are placed together, the theoretical level of resultant sound is not 146 dB but 76 dB — in other words, each doubling of sound intensity increases the measurable level by 3 dB.

### ARMY NOISES

In general, noise sources in the Army can be divided into three categories:

- Gunfire from weapons of various kinds, all associated with short-term high intensity impulses.
- Vehicles.
- Other sources, such as machinery noise in workshops.

Investigations of the average ambient noise levels in various military vehicles and tracked vehicles have shown that all are above the 85 dB normally accepted as the limit of safety.

## AVERAGE AMBIENT NOISE LEVELS

Source	Level Range (dB)
L1A1 (SLR) rifle	168
Pop music — electronically amplified	150
Sheet metal press	125
Jet takeoff at 200 ft	120
Sheet metal bandsaw	120
Hand grinding (steel)	110
M1	105
Light machine gun	105
Tank	100
M 113 APC	100
Printing machine-room	90-95
Spray-painting booth	85-90
Idling bulldozer	85
Busy street	80
Lathes	80

### Gunfire

Coles<sup>3</sup>, investigating the physical nature of the SLR stimulus, found the sound field to be symmetrical and with rifle and microphone 2 ft above grass, the peak positive pressures to be:

- 2 inches from either ear or firer 168 dB
- At approximate position of instructor's ear 174 dB
- At position of next marksman in line (6 ft) 170 dB

These figures are important in that they emphasise the danger not only to the rifleman, but to his neighbours on the mound, and even more importantly, to the instructor.

### Vehicles

Interest in the noise produced by vehicles, particularly armoured personnel carriers and tanks, arose early in the Second World War, and several Australian workers investigated the problem. Murray<sup>4</sup> found

<sup>3</sup> Coles R. R. A. 'Some considerations concerning the effect on hearing of the noise of small-arms.' *Fourth International Congress on Acoustics*. Copenhagen 21-29 August 1962.

<sup>4</sup> Murray N. E. 'Noise in Australian AC1 Cruiser tank.' *CAL Report No. 2*, 18 December 1942.

that the noise level in the Australian Cruiser tank was of the same order as the noisiest British tanks — the Cruiser MK6 and the Churchill, varying from 114 dB to 120 dB.

Since the war many modifications have been made to armoured vehicles, but measurements taken during 1956 produced figures of 115-125 dB, and more recently the noise production of the M113 has been shown to be of the order of 100 dB.

### **Helicopters**

In view of the tremendous increase in the use of helicopters to ferry troops into forward areas, investigations of their noise levels have been conducted. At distances less than an average of 150 ft from the vehicle, typical sound pressure levels exceed 85 dB, and will thus affect troops waiting on the pad to be shuttled forward; the level inside the cabin with doors closed is somewhat less. It has been rare in this situation for ear protection to be worn, although the probability is high that upon arrival at the destination, enemy contact will be made before hearing returns to normal.

## **CONCLUSIONS**

Deafness, produced militarily, was in the past worn proudly like a row of campaign medals, living proof of the sufferer's immersion in the maelstrom of battle. When deafness due to acoustic trauma becomes a stigma in military circles, the ascendancy will have been gained, but complacency must not be allowed to replace it.

The conservation of hearing is a vital facet not only of military medicine but of general man management. It deserves a far more prominent place in the training of commanders at all levels, and of every soldier. There are no second chances. □

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## **SOME DEFINITIONS FOR THE MATHEMATICALLY MINDED**

The term "sound" refers to longitudinal mechanical wave motion having frequencies in the range 20 to 20,000 cycles per second. The unit of frequency is the hertz (Hz). Sound forms part of a mechanical wave spectrum extending from very low frequencies up to extremely high frequencies such as occur with motions of atoms in a crystal.

In noise measurement, the main concern is with loud sources, but in the clinical testing of hearing, it is only the very weak sounds that are involved. The comparison and measurement of sounds are of paramount importance in the study of noise prevention and ear protection, and since sound is a form of energy it can be measured in different ways. Two such methods are those of acoustic intensity, measured in watt per square metre ( $W/m^2$ ) and acoustic pressure, the unit of which is the pascal (pa) equal to 1 newton/ $m^2$ .

Owing to the enormous range of values of acoustic intensity and pressure observed in practice, it has been found expedient to employ a logarithmic scale, the most common being the decibel scale. This represents a ratio between the observed sound and a reference sound. By general agreement the latter is taken to be a value of  $10^{-12} W/m^2$ . This is approximately the lowest level that the ear of a healthy young adult can detect.

The value in decibel is expressed thus:

$$\text{decibel} = 20 \log \frac{P_1}{P_2}$$

Where  $P_1$  represents the sound being measured and  $P_2$  is the reference pressure.

A decibel is therefore merely a convenient unit used to indicate loudness. Being a ratio, it is dimensionless. It represents on a logarithmic scale, a comparison between a given sound level and the minimum level that can be heard by an average healthy young ear. The situation, already complex enough as shown above, has been additionally complicated by the introduction of what is known as "weighted" scales. A sound level meter, in its basic form, will measure the overall sound pressure level to which it is exposed. Unfortunately the human ear is not so accommodating, and will respond differently to sounds of different frequencies, making them appear louder or softer than their pure energy content would indicate.

In addition to the linear range, therefore, most sound level meters have three weighting networks labelled A, B and C. Recently a fourth has been introduced, the D network, for work in relation to very loud jet aircraft noise. It has already been superseded to some extent by analysis technique refinements.

The weighting networks were introduced some years ago for use with increasing sound levels, but experience has shown that it is preferable to use the 'A' network whatever the ambient level. In general industrial noise measurements therefore, the results are customarily in dB(A). The relationship between the centre frequency of any measured band, in Hertz, and the A-weighted dB scale is shown in the following table:

### 'A' WEIGHTINGS

Centre frequency (Hertz)	'A' — weighting
63	-26
125	-16
250	-9
500	-3
1000	0
2000	+1
4000	+1
8000	-1

### WOLVES IN SHEEP'S CLOTHING?

Reports have been received that Italians have been dressing up in baboon skins and photographing our positions. In future all baboons will be closely observed to see whether or not they are carrying cameras. Any that are will be brought to this Headquarters for questioning. Should there be any doubt as to whether they are baboons or Italians they should be examined from the rear.

—Extract from a British General Staff Instruction issued somewhere in Abyssinia during the Middle East Campaign.