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OCCASIONAL PAPER

**THE LANDWARD DEFENCE
OF SINGAPORE
(1919 — 1938)**

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Introduction

The Singapore naval base, first conceived in 1919 and endorsed by the British Cabinet in 1921, was the cornerstone of British strategic plan in the Far East. Dubbed as the Singapore strategy, the plan entailed the building of a secure naval base in Singapore. The success of the Singapore strategy was dependent on the timely despatch of the main fleet and the retention of the Singapore naval base before the arrival of the fleet.

In respect of the defence of Singapore, the question that comes to mind is: what were the assumptions of the British defence planners on the likely form and direction of the Japanese attack?

Popular Misconceptions

The popular view, perpetuated by a succession of books and articles, is that there were no plans to defend Singapore against an overland attack from the rear. The big guns of Singapore were guarding against a frontal attack from the sea, while the Japanese came in by the open, unguarded backdoor on the Malayan mainland. It would be of historiographical interest to trace the origins and chart the course of these popular misconceptions.

Lord Strabolgi wrote in 1942 that:

The weakness of the whole position was the defence of the Malay Peninsula. The stock argument always used against those who suggested

there might be a land attack on Singapore from the north was... the utterly false statement that the jungle country on the mainland to the north of the island was impenetrable. How intelligent men could have accepted this argument is a mystery.¹

In 1946, Edwin M. Glover of the *Malaya Tribune* newspaper noted in his book that:

The island's east coast defences, with their sixteen-inch [sic] guns and heavy howitzers... could not be brought into play in the case of the landing from Johore... To the best of my belief these guns never fired a shot — they were pointing the wrong way.²

Winston Churchill's memoirs on the war were published between 1948 and 1951. Churchill, Prime Minister during the war, was naturally relating and explaining events from his point of view, rather than giving a dispassionate discourse on Far Eastern defence in historical perspective. Instead of helping to clarify the situation, he wittingly or unwittingly lent credence to the popular beliefs when he quoted his historic minute of 19 January 1942 to the Chiefs of Staff:

I must confess to being staggered... It never occurred to me for a moment... that the gorge of the fortress of Singapore with its splendid moat half a mile to a mile wide was not entirely fortified against an attack from the northward.

What is the use of having an island for a fortress if it is not to be made into a citadel? To construct a line of detached works with searchlights and cross-fire combined with immense wiring and obstruction of the swamp areas, and to provide the proper ammunition to enable the fortress guns to dominate enemy batteries planted in Johore, was an elementary peace-time provision which it is incredible did not exist in a fortress which has been twenty years building....

Seaward batteries and a naval base do not constitute a fortress, which is a completely encircled strong place. Merely to have seaward batteries and no fort or fixed defences to protect their rear is not to be excused on

¹ Lord Strabolgi, *Singapore and After: A Study of the Pacific Campaign* (London: Hutchinson, 1942), p. 50.

² Edwin M. Glover, *In 70 Days: The Story of the Japanese Campaign in British Malaya* (London: Muller, 1946), pp. 11-12. In fact, there were no 16" guns, but five 15" guns.

any ground... I warn you this will be one of the greatest scandals that could possibly be exposed.³

In a repentant mood, or possibly casting an eye on historians writing in the future, Churchill declared in his memoirs:

I ought to have known. My advisers ought to have known and I ought to have been told, and I ought to have asked. The reason I had not asked about this matter, amid the thousands of questions I put, was that the possibility of Singapore having no landward defences no more entered my mind than that of battleship being launched without a bottom.⁴

Churchill included a number of telegrams in his memoirs. Many of the wartime telegrams, drafted in the heat of battle, were reproduced without adequate explanation of the issues raised. One of which was the telegram of 19 January 1942 from General Archibald Wavell, the Supreme Commander of A.B.D.A. Area:

I must warn you however that I doubt whether island can be held once Johore is lost. The fortress guns are sited for use against ships, and have mostly ammunitions for that purpose; many can only fire seawards... I do not want you to have a false picture of the island fortress. Singapore defences were entirely constructed to meet seaward attack...⁵

Another of Wavell's telegrams reproduced was that of 21 January 1942:

I am anxious that you should not have false impression of defences of Singapore Island. I did not realise myself until lately how entirely defences were planned against seaward attack only...⁶

³ Winston Churchill, *The Second World War*, Vol. 4: *The Hinge of Fate* (London: Cassell, 1951), p. 44. This is the Prime Minister's Personal Minute, No. D4/2, 19 Jan. 1942, CAB 120/615; PREM 3/168/1; PREM 3/168/7A; and WO 106/2583A. Unless otherwise stated, all archival sources are from the Public Record Office, London.

⁴ Churchill, *War*, 4, 43.

⁵ Ibid., pp. 47-48. This is telegram No. 00118 from A.B.D.A. Headquarters at Batavia, 19 Jan. 1942, addressed directly to Prime Minister, CAB 120/615; PREM 3/168/1; PREM 3/168/7A; WO 106/2533; and WO 106/2583A. 'A.B.D.A. Area' stands for American-British-Dutch-Australian Area, the South West Pacific Command which functioned from 15 Jan. to 25 Feb. 1942.

⁶ Churchill, *War*, 4, 48-49. This is telegram No. 00207 from Wavell to Churchill, 21 Jan. 1942, CAB 120/615; PREM 3/168/1; PREM 3/168/7A; and WO 106/2583A.

In very small print at the bottom of the page, Churchill commented on Wavell's telegram of 19 January 1942: 'This is inaccurate. The majority of the guns could fire landward also.'⁷ He also quoted Wavell's telegram of 16 January 1942, which read: 'Fortress cannon of heaviest nature have all round traverse but their flat trajectory makes them unsuitable for counter battery work.'⁸ Unfortunately the small print and this telegram were ignored, and, as A. H. Burne observed,⁹ the public plummeted for the more sensational lines in Churchill's memoirs. In David McIntyre's view, '...the account gave currency to the well-known idea that the guns were pointing the wrong way'.¹⁰ The impact of Churchill's memoirs could be gauged from this comment from Major General L. E. Beavis of Australia: 'Statements have been made, including, I understand, one by Sir Winston Churchill, that the guns in Singapore defences could only fire out to sea.'¹¹

Some thirty to forty years after the fall of Singapore, and despite the opening of the official records and publication of a number of well-researched books,¹² the canard about the guns and landward defence is still deeply rooted in the public mind.

⁷ Churchill, *War*, 4, 48.

⁸ Ibid., p. 42. This is telegram No. 64452 from Wavell to Churchill, 16 Jan. 1942, PREM 3/168/7A; and WO 106/2583A.

⁹ Lieutenant Colonel A.H. Burne to the editor, *Daily Telegraph*, 16 Oct. 1950. Burne was the editor of *The Gunner*.

¹⁰ W. David McIntyre, *The Rise and Fall of the Singapore Naval Base, 1919-1942* (London: Macmillan, 1979), p. 236.

¹¹ L.E. Beavis, 'The Defences of Singapore', *Stand To* 8 (Mar./Apr. 1963), 8. Beavis tried to correct this misimpression in his article.

¹² See, for examples, McIntyre, *Naval Base*, esp. pp. 169-174, 198-199, 218; James Neidpath, *The Singapore Naval Base and the Defence of Britain's Eastern Empire, 1919-1941* (Oxford: Oxford University Press, 1981), esp. pp. 152-170, 223-225; Louis Allen, *Singapore, 1941-1942* (London: Davis-Poynter, 1977), esp. pp. 92-115; and Raymond Callahan, *The Worst Disaster: The Fall of Singapore* (Newark: University of Delaware Press, 1977), esp. pp. 128-216. Using both Commonwealth and Japanese sources, Allen provides a stimulating and balanced commentary on the conduct of the campaign, with very good analysis on the outbreak of the war. The book is, however, rather confusing in terms of organization. Callahan concentrates on the period 1940 to 1942, with focus on the role of Churchill, inter-service rivalry and civil-military relations. Some monographs still neglect or skim over the planning and preparations for landward defence. See, for example, Ian Hamill, *The Strategic Illusion: The Singapore Strategy and the Defence of Australia and New Zealand, 1919-1942* (Singapore: Singapore University Press, 1981), pp. 36-38, 230-232.

Writing in the *Daily Telegraph* of 4 April 1974, Patrick Morrah exclaimed that 'once again we read of the almost incredible incompetence in high places over the years — the guns facing the wrong way'.¹³ George Evans, writing in the *Sunday Telegraph* on 14 April 1974, concluded that: 'All too late it was discovered that the guns of Singapore had been pointing the wrong way all the time.'¹⁴ In a letter to the *Daily Telegraph* on 15 April 1974, B. M. Marshall-Foster wrote that her father was involved in the defences of Singapore between 1907 and 1911, but died just before the fall of Singapore. She declared:

I am glad that the timing was right, for it would have broken his heart to read the banner headlines in the press, 'The Guns Facing the Wrong Way'. No one at the War Office, it seems, had the brains or forethought to give those guns and their emplacements a thought for 30 years.¹⁵

In 1976, Norman F. Dixon, a psychologist who had previously served in the Royal Engineers, wrote a book about military incompetence. Selecting the campaign in Malaya as one of his case studies, Dixon asked many pertinent and penetrating questions, and offered some interesting insights into the mind of the military. But he, too, fell prey to the popular misconceptions. Dixon wrote:

...senior army commanders from that time on stubbornly clung to the dogma that no Japanese would ever advance on Singapore down the Malay Peninsula...

The guardians of Singapore defended their wrong decisions in a number of ways. One of these was to import official lecturers from England. Apparently oblivious of the scepticism of their civilian audiences, these 'experts' tried to turn black into white by reiterating that no army, let alone a Japanese army, could advance through the impenetrable

¹³ Patrick Morrah in a review of Kate Caffrey's book, *Midday Sun*, in *Daily Telegraph*, 4 Apr. 1974.

¹⁴ George Evans in another review of Kate Caffrey's book, *Sunday Telegraph*, 14 Apr. 1974.

¹⁵ Marshall-Foster's letter, *Daily Telegraph*, 15 Apr. 1974.

jungle of the Malay Peninsula, that this same jungle was quite impassable to tanks...¹⁶

The Malayan campaign was featured in *The Mirror*, a publication of the Singapore government, in February 1978, and the staff writer concluded that 'the assumption that the most probable form of attack was a naval one from the south proved disastrous'.¹⁷ Another writer noted in a 1981 issue of *After the Battle*, a quarterly magazine, that the claim of impregnability of Singapore was valid if the island was attacked from the sea, but 'the Japanese came in by the open back door'.¹⁸

Writing in a special feature of the *Daily Telegraph* on 15 January 1982, Richard West remarked that 'everyone now knows that the guns were positioned to meet a naval attack and could not be turned to face an attack from mainland Malaya'.¹⁹ In a February 1982 issue of the *TV Times*, Linda Hawkins asserted that 'it was believed that if an attack came, it would come from the sea, and so by 1939, Sentosa on the southern coastline of Singapore was bristling with heavy guns ready to counter a naval bombardment'.²⁰ Hawkins was reporting on a Granada Television documentary about the fall of Singapore entitled 'Surrender'.²¹

And on the fortieth anniversary of the fall of Singapore, 15 February 1982, *The Times* (London) published an article written by Anthony

¹⁶ Norman F. Dixon, *On the Psychology of Military Incompetence* (London: Jonathan Cape, 1976), p. 132. Dixon served as a Royal Engineers officer from 1940 to 1950, and was a Reader in Psychology at University College, London, in 1976. Dixon did not give any source for the paragraph about 'official lecturers from England'. This author has not come across any such reference in official documents or personal accounts.

¹⁷ Staff writer, 'World War II Relics in Singapore', *The Mirror*, 13 Feb. 1978, p. 4.

¹⁸ 'Singapore', *After the Battle* 31 (1981), 7. Name of author not given.

¹⁹ Richard West, 'Fall and Rise of Singapore', *Daily Telegraph*, 15 Jan. 1982.

²⁰ Linda Hawkins, 'Singapore Surrender', *TV Times*, 6-12 Feb. 1982, p. 16. 'Sentosa' is the new name for Pulau Blakang Mati. Hawkins' account, including the passage quoted, was reproduced word for word in a Singapore newspaper. See John Sellars, 'Singapore Fell', *Straits Times*, 15 Feb. 1982.

²¹ The documentary was screened on British TV in Feb. 1982.

Kemp, who was the co-author of a book on the fall of Singapore.²² In the article, Kemp noted that 'myths and misconceptions cluster around the story of Singapore like vultures around a corpse and these myths die hard'. And yet in the same breath Kemp asserted that:

British historians have for many years tended to pour scorn on the poor performance of the French in 1940. They, too, believed that they had a 'fortress' as they sat confidently behind the Maginot Line, inviting the Germans to invade elsewhere. We built our Maginot Line in Singapore to defend ourselves against a Japanese fleet and refused to believe in the possibility of a landborne invasion.²³

Thus forty odd years after the war, the fog of myths still hangs over the Malayan campaign. The truth of the matter is: the Singapore guns were not pointing the wrong way; the British authorities did expect the Japanese to attack at the rear through the Malay Peninsula, and had prepared a plan to forestall and counter such an invasion.

Guns: Defence against Naval Attacks

When the decision was taken in 1921 to build the naval base, Singapore's defences were designed to deter an attack by a squadron of armoured cruisers, accompanied by a raiding force of about 2,000 men.²⁴ There were five 9.2" guns and four 6" guns, sited primarily for

²² A better appreciation of defence problems and planning was shown in the book than in the article. See Richard Holmes and Anthony Kemp, *The Bitter End: The Fall of Singapore, 1941-42* (Chichester: Antony Bird, 1982), pp. 17-23, 65-75. However, for some unexplained reason, all reference notes were omitted and it is impossible to check up on the sources used. The book was serialized in the *Straits Times* of Singapore in Feb. 1982. Holmes is on the staff of the Royal Military Academy at Sandhurst, and Kemp is a freelance writer.

²³ Anthony Kemp, 'Singapore: The Bitterness Lingers on, 40 Years After', *The Times* (London), 15 Feb. 1982. To his credit, Kemp noted in the article that the Singapore guns could traverse around to fire inland, and indeed did so.

²⁴ 'Singapore. Development as a Naval Base', Overseas Defence Committee (O.D.C.) Paper No. 501-M, 7 June 1921, paras. 41-47, CAB 8/6. See also 'Notes by Naval Members of O.D.C.', dated 5 May 1921, paras. 8-12, in 'Naval and Military Situation in the Far East', O.D.C. Paper No. 63, 6 May 1921, CAB 8/8. 'Notes by Naval Members of O.D.C.' also in BTY 8/5, Beatty Papers, National Maritime Museum (N.M.M.). In para. 12, the Naval Members recommended for the first time that 'permanent seafront and seaward defences' be established to protect Singapore from naval bombardment and blocking operations.

the defence of Keppel Harbour.²⁵ In view of the importance of the proposed naval base and the possibility of an attack by a much more formidable force of Japanese battleships and divisions, there was the need to review and strengthen the defence arrangements. The Admiralty appreciated in 1922 that the Japanese could despatch six battleships, and the War Office estimated in 1924 that the Japanese could mount a maximum force of 60,000 to 100,000 troops.²⁶ These estimates varied from time to time, but whatever the threat, Singapore must be made doubly safe till the arrival of the fleet. And there unfolded the 'Guns versus Air' battle, which raged within the British defence establishment from 1924 to 1933.²⁷

There was no disagreement on the 9.2" medium guns for use against light cruisers or the 6" and 4.7" light guns for closer combat, especially night raids. All three services agreed that these were essential.²⁸ The dispute was about the 15" heavy guns designed for defence against battleships. The Admiralty wanted eight 15" guns; the War Office considered that six 15" guns would be sufficient.²⁹ But the Air Ministry argued that aircraft would be a cheaper, more mobile and more efficient substitute.³⁰ The aircraft would be able to attack ships

²⁵ 'History of the Singapore Base', 1931?, Section 4A, para. 1, WO 106/2429. Cited by *Neidpath*, p. 83. See also S. Kathiravelu, 'Fortifications of Singapore, 1819-1942' (B.A. thesis, University of Malaya, 1957), pp. 1-44.

²⁶ The 1922 assessment of the Admiralty (Adm.) cited in 'Singapore: Establishment of a Naval Base', O.D.C. Paper No. 132, 17 June 1924, para. 3, CAB 8/9. For War Office (W.O.) estimates, see 'Singapore: Scale of Sea-borne Land Attack', O.D.C. Paper No. 143, 3 Dec. 1924, para. 3, CAB 8/9.

²⁷ Where appropriate, the various estimates of the Japanese threat will be included in the text.

²⁸ The agreed scale for medium and light guns in 1924 were: six 9.2" guns, twelve 6" guns and two 4.7" guns. See 'Singapore: Establishment of a Naval Base. Scales of Naval, Military and Air Defences', O.D.C. Paper No. 511-M (draft), 23 Dec. 1924, paras. 13-4, CAB 8/9. The Cabinet approved these recommendations in Nov. 1925. See Cabinet Minutes 52(25)12, 11 Nov. 1925, CAB 23/51.

²⁹ Chiefs of Staff Sub-Committee 16th Mtg., 24 Feb. 1925, CAB 53/1. See also McIntyre, *Naval Base*, pp. 36-37.

³⁰ The objections to the 15" guns were first raised on behalf of the Air Ministry (A.M.) by Air Commodore J. M. Steel, Deputy Chief of Air Staff, in Dec. 1924. See 'Singapore: Establishment of a Naval Base. Scales of Naval, Military and Air Defences', O.D.C. Paper No. 145, 24 Dec. 1924, paras. 3-6, CAB 8/9.

up to a distance of 150 miles, while the 15" guns only have a maximum range of 20 miles. Moreover, the 15" guns required the assistance of spotter aircraft, which in turn needed the protection of fighters. It would be wise, then, to go all the way and rely on these aircraft and the torpedo-bombers for defence.³¹ With local air superiority, no Japanese force would be able to land or establish an advance base within 150 miles of Singapore.³²

The Chief of the Air Staff, Sir Hugh Trenchard, contended that two squadrons of torpedo-bombers, one squadron of fighters and a flight of seaplanes, stationed in Iraq or India during peacetime, would be a more than adequate, and indeed a more effective replacement for the 15" guns.³³ Trenchard was obviously going all out to carve a niche for the fledgling Royal Air Force (R.A.F.). Nevertheless, he was genuinely convinced that air power was the wave of the future, and that these big guns would soon be obsolete.

The top brass at the Admiralty and War Office, however, were not persuaded that these untried torpedo-bombers, based overseas, could do the job, and stuck to their guns. Quite apart from their suspicion that Trenchard was 'empire building' and the intense inter-service competition for limited resources in those lean years, they sincerely believed that he was exaggerating the accuracy and power of the existing torpedo-bombers. They would only accept the complete and proven deterrence of land-based 15" guns. The Singapore base was far too important to be left a hostage to the uncertainties of an experimental system. Further, as Lord Beatty, the First Sea Lord, pointed out, the proposal was basically a scheme for air reinforcement, rather

³¹ Cabinet Singapore Sub-Committee 5th Mtg., 27 July 1925, CAB 16/63. See also Andrew Boyle, *Trenchard* (London: Collins, 1962), pp. 552-555. The Singapore Sub-Committee was an ad hoc body set up under the Committee of Imperial Defence to examine the siting and defences of the base, and to make recommendation on the projected date of completion.

³² Trenchard gave the figure of 150 miles at the Cabinet Singapore Sub-Committee meeting of 27 July 1925. See *Ibid.* Figure of 100 miles was mentioned earlier. See Air Ministry to W.O., 4 Sept. 1923, ADM 116/2394; and T.R. Cave, 'Aircraft in the Far East', Apr. 1924, AIR 9/38/3. Both cited in McIntyre, *Naval Base*, p. 74.

³³ McIntyre, *Naval Base*, p. 76. Trenchard was the Chief of the Air Staff from 1918 to 1927.

than an alternative plan of defence.³⁴ Trenchard, moreover, did not produce a concrete plan, and was vague on many points. As his official biographer, Andrew Boyle, put it:

Besides, who could say how many squadrons, or what type, would be ultimately necessary? Apparently not Trenchard. Who knew when the half-finished chain of airfields from Egypt to Singapore would be ready? Did Trenchard? Would he kindly descend from his cloudbank and submit even an outline of his requirements?

He put off committing himself as long as possible... On 12 May 1926, he presented very tentative estimates of needs, based on his then meagre total force of thirty-seven regular and reserve squadrons. As he realized, this left him little, if any, margin for manoeuvre; so he prefaced his arguments with a plea for deferment.³⁵

Trenchard, the champion of air power, was perhaps not its best advocate. He was a visionary without the powers of persuasion; a visionary whose ideas were not as yet backed up by demonstrable feats of the existing flying machines. Trenchard was a prophet before his time. It would take a world war and the sinking of the battleship *Prince of Wales* by Japanese torpedo-bombers to validate his visions.³⁶

After long-drawn debates, numerous exercises,³⁷ and much manoeuvring, the Cabinet Coast Defence Committee, set up specially to arbitrate in the dispute, recommended in May 1932 that the 15" guns should be the main deterrent against a naval attack. Instead of quarrelling about substitution, the emphasis should be on co-operation, with the Royal Air Force providing for reconnaissance, artillery spotting, fighter defence and offensive attacks. With the

³⁴ Ibid., pp. 76-80; and Hamill, *Illusion*, pp. 113-116. Beatty was First Sea Lord from 1919 to 1927.

³⁵ Boyle, *Trenchard*, pp. 554-555.

³⁶ HMS *Prince of Wales* and HMS *Repulse* were sunk off the east coast of Malaya by Japanese torpedo-bombers on 10 Dec. 1941. For the best analysis of the despatch and sinking of these capital ships, see Arthur J. Marder, *Old Friends, New Enemies: The Royal Navy and the Imperial Japanese Navy, Strategic Illusions, 1936-1941* (Oxford: Oxford University Press, 1981). See also Martin Middlebrook and Patrick Mahoney, *Battleship: The Loss of the Prince of Wales and the Repulse* (Harmondsworth: Penguin, 1977); and Richard Hough, *The Hunting of Force Z* (London: White Lion, 1963).

³⁷ For the various gunnery and bombing trials between 1924 and 1931, see McIntyre, *Naval Base*, pp. 80-83, 108-109.

threatening clouds gathering in the Far East, the Committee could not bring itself to gamble on the uncertainties of air defence.³⁸ Its chairman, Stanley Baldwin, had the Mukden Incident of September 1931 and the Shanghai Crisis of January 1932 in mind,³⁹ when he remarked that if the Japanese ever 'ran amok', the British would be helpless without a secure base.⁴⁰

The Cabinet accepted this recommendation in April 1933, and gave approval for 'Stage I' of the defences, including three 15" guns.⁴¹ And in July 1935, with the generous gift of half a million pounds by the Sultan of Johore, the Cabinet allocated £400,000 for the installation of two more 15" guns in 'Stage II' of the defences while the balance was channelled to the Air Ministry for improving its facilities in Singapore.⁴² This distribution of funds symbolized graphically the outcome of the 'Guns versus Air' battle.⁴³

³⁸ 'Report of the Coast Defence Committee', Committee of Imperial Defence (C.I.D.) Paper No. 370-C, 24 May 1932, CAB 16/105. The C.I.D. decided on 7 Dec. 1931 to set up the committee, which met six times in 1932. For minutes of meetings, see CAB 16/105.

³⁹ Following an incident at Mukden on the South Manchurian Railroad, the Japanese army occupied south and central Manchuria. This is considered by many to be the start of the Sino-Japanese conflict and the war in the Pacific. In Shanghai, a boycott of Japanese goods led to rioting and fighting, with the Japanese occupying the port and other areas. See Peter Lowe, *Britain in the Far East: A Survey from 1819 to the Present* (London: Longman, 1981), pp. 136-146.

⁴⁰ C.I.D. 256th Mt., 9 June 1932, CAB 2/5. See also 'Coast Defence and the Singapore Naval Base', C.I.D. Paper No. 374-C, 12 Oct. 1932 CAB 5/7.

⁴¹ Cabinet Minutes 27(33)5, 12 Apr. 1933, CAB 23/75.

⁴² These two 15" guns were installed at Changi, and together with a 'Stage I' 15" gun, were named the Johore Battery. The other two 15" guns of 'Stage I' were sited near the south western coast of Singapore island, and was known as the Buona Vista Battery. The Air Ministry used the £100,000 for preparing the second and third airfields at Sembawang and Tengah, and accommodation for spotters at Kallang airport. See McIntyre, *Naval Base*, pp. 120-122.

⁴³ For the best account of the 'Guns versus Air' controversy, see McIntyre, *Naval Base*, pp. 36-37, 69-85, 108-112, 120-122. However, the map on page 121 should show three instead of two 15" guns at the Johore Battery. See also Neidpath, *Singapore*, pp. 81-101, 108-128; Hamill, *Illusion*, pp. 110-124, 213-224; and Boyle, *Trenchard*, pp. 500-503, 551-559, 569-578. In the view of this author, there is scope for an in-depth study of this subject, with the focus on technological change, weapon evaluation, organization and decision-making.

Guns could and did Fire Landward

By late 1939, the defences of Singapore were in place.⁴⁴ The main defences consisted of five 15" guns, six 9.2" guns and eighteen 6" guns. Three 15" guns, named the Johore Battery, were sited near Changi at the eastern side of the Singapore island. The remaining two 15" guns, the Buona Vista Battery, were at the southern sector. The six 9.2" guns were divided equally between Pulau Tekong Besar and Sentosa.⁴⁵

When the installations of these guns were being discussed in 1924-1925, the War Office decided that they should as far as possible have all-round traverse, so that the guns could be used against hostile landings in Johore or against a force already landed and operating in Johore.⁴⁶ Though these guns were primarily installed for defence against naval attacks, it is evident that their subsidiary use against a landward attack was borne in mind from the very beginning. Their eventual use in 1942 against landward targets was not an 'afterthought', nor was it due to the ingenious suggestions of Churchill.

Of the 15" guns, the three at the Johore Battery had all-round traverse, but the two at Buona Vista had only limited traversing arcs of

⁴⁴ The controversy delayed the completion of 'Stage I' of the defences from 1930 to 1938. The official historians stated that by Sept. 1939, the defences 'were in readiness but some engineering work on the five heavy 15" gun emplacements remained to be done'. See S. Woodburn Kirby et. al., *The War Against Japan*, Vol. 1: *The Loss of Singapore* (London: HMSO, 1957), p. 21. Major General Lionel Bond, G.O.C. Malaya, reported in Apr. 1940 that the defences of Singapore were completed. See Bond to W.O., 13 Apr. 1940, para. 4, AIR 2/7174; WO 32/9366; and WO 106/2440.

⁴⁵ W.O., 'Coast Artillery Ammunitions: Singapore Holdings, as on 31.12.41', 20 Jan. 1942, WO 106/2533; and WO 106/2555. See also 'Singapore', *After the Battle* 31 (1981), 5-8. For maps on the location of various guns on Singapore, see Kirby, *Japan*, 1, map 21; and Stanley L. Falk, *Seventy Days to Singapore: The Malayan Campaign, 1941-42* (London: Robert Hale, 1975), pp. 292-3. Falk was the Chief Historian of the United States Air Force, and was a Japanese language officer during the war. He provides an excellent short account of the military campaign, based mainly on secondary sources.

⁴⁶ McIntyre, *Naval Base*, p. 47. The sources cited by McIntyre are: Major General T. Fraser, G.O.C. Malaya, to W.O., 29 Nov. 1924, WO 32/3624; and W.O. to G.O.C., 12 Mar. 1925, WO 32/3624.

about 180 degrees.⁴⁷ From 1938 onwards, 'practice seawards' was carried out regularly with the 15" guns.⁴⁸ Prompted or stung by Churchill's minute of 19 January 1942,⁴⁹ the Chiefs of Staff sent specific instructions the next day that 'full preparations should be made to use fortress guns against landward attack'.⁵⁰ Malaya Command replied on 22 January that the Johore Battery could bear on Johor Bahru and its approaches, while the Buona Vista Battery could target on part of the coast of Johore.⁵¹ It probably meant that with 180 degree traverse and at maximum range of 36,300 yards, the Buona Vista Battery could still reach parts of the south west coast of Johore. But these parts would be too far removed from the areas of importance in any Japanese attack from across the Straits of Johore.⁵²

⁴⁷ Lieutenant Colonel C. C. M. Macleod-Carey, who was Second-in-Command of the 7th Coast Artillery Regiment in Singapore, wrote that the Johore Battery had all-round traverse, but the Buona Vista Battery were fitted in 1938 with Magslip cables that were too short for all-round traverse. See Macleod-Carey, 'Singapore Guns', *War Monthly*, No. 34 (1976), pp. 36-38. The map attached to a 1941 report shows the Buona Vista Battery with about 180 degree arc. See C.I.G.S.' Military Assistant, 'On Guns', attached map, 7 May 1941, CAB 120/615. Neidpath stated that four had all-round traverse, but the fifth had 180 degree traverse. See Neidpath, *Singapore*, p. 224. See also Lieutenant Colonel A.E. Tawney's letter to the editor, *The Gunner* 33 (Feb. 1951).

⁴⁸ 'On Guns', 7 May 1941, CAB 120/615. This report was in response to a minute from the Prime Minister. See Winston Churchill to Hastings Ismay, 4 May 1941, PREM 3/156/6.

⁴⁹ Churchill directed that there should be 'an attempt to use the fortress guns on the northern front by firing reduced charges and by running in a certain quantity of H.E. if none exists'. See Prime Minister's Personal Minutes, No. D4/2, 19 Jan. 1942, CAB 120/615; PREM 3/168/1; PREM 3/168/7A; and WO 106/2583A. See also Churchill, *War*, 4, 44-5. 'H.E.' stands for high explosives.

⁵⁰ C.O.S. to C.-in-C. A.B.D.A. Area, No. 65356, 20 Jan. 1942, CAB 120/615; PREM 3/168/1; PREM 3/168/7A; WO 106/2533; and WO 106/2555. See also C.O.S. 20th Mtg., 19 Jan. 1942, CAB 79/17. W.O. also sent a similar enquiry about the guns. See W.O. to G.O.C. Malaya, No. 65542, 20 Jan. 1942, WO 106/2555.

⁵¹ Malaya Command's Advanced H.Q. to C.-in-C., A.B.D.A. Area, repeated to W.O., No. 913?, 22 Jan. 1942, CAB 120/615; PREM 3/168/1; WO 106/2555; and WO 106/2583A.

⁵² 'On Guns', 7 May 1941, attached map, CAB 120/615.

Though the 15" guns could be traversed landward, they were only supplied with 1,200 armour-piercing rounds for use against ships, and not the high explosive rounds for use against land targets.⁵³ These big guns could fire only about 200 rounds each before their barrels were worn out and had to be replaced by reserve barrels. They were, by their calibre, more suited for bombardment of armoured ships, than for use against troops or field artillery. Hence, no high explosive rounds were stocked.⁵⁴ But with the prospect of losing Johore and the mounting pressure from London to use these guns, Malaya Command requested on 22 January that 250 high explosive rounds be sent to Singapore.⁵⁵ The Admiralty were attempting to ship some of these rounds from the Middle East in early February, but they did not reach Singapore.⁵⁶ Singapore, moreover, did not have the range tables necessary for the efficient use of these rounds.⁵⁷

In the event, the Buona Vista Battery did not fire landward, but the Johore Battery went into action, firing the armour-piercing rounds,

⁵³ W.O., 'Coast Artillery Ammunitions: Singapore Holdings, as on 31.12.41', 20 Jan. 1942, WO 106/2533; and WO 106/2555. The armour-piercing rounds were made with very thick steel walls and nose, designed to penetrate the thick armour plate of a warship without collapsing. They had a delay-action fuse fitted to the base of the shell. The effect was that the shell would detonate inside the ship, and the casing would break up into very small chunks of steel. These would smash up boilers, electric cables and machinery, and generally create havoc inside the ship. Used on land targets, they would drill a hole of about 20 feet deep, but would not be very effective as an anti-personnel round. See Macleod-Carey, 'Singapore Guns', *War Monthly*, No. 34 (1976), p. 38. A.H. Burne commented: 'Using such shells against Japanese infiltrating through heavily enclosed country would be about as futile as using a bulldozer to pick up salt split on the table-cloth.' See Burne's letter to the editor, *Daily Telegraph*, 16 Oct. 1950.

⁵⁴ Neidpath, *Singapore*, p. 224.

⁵⁵ Malaya Command's Advanced H.Q. to C.-in-C., A.B.D.A. Area, repeated to W.O., No. 913?, 22 Jan. 1942, CAB 120/615; PREM 3/168/1; WO 106/2555; and WO 106/2583A.

⁵⁶ 'H.E. Ammunitions for Landward Firing by Coast Artillery Guns', 2 Feb. 1942, CAB 120/615.

⁵⁷ W.O. to G.O.C. Malaya, No. 67154, 28 Jan. 1942, and W.O. to G.O.C. Malaya, No. 68619, 4 Feb. 1942, WO 106/2555.