

The signature on 9th May of the peace treaty between Indo-China and Siam was followed in the same month by a Franco-Japanese economic agreement signed at Tokyo, the effect of which, or of a prior undisclosed agreement, was believed by the Commander-in-Chief, China to be the allocation to France of very large quantities of rubber destined for Germany, whilst Japan herself expected to obtain 45,000 tons towards her annual requirement of 65,000. Hitler's sudden onslaught on Russia, which commenced on 22nd June, closed the Vladivostock route to Germany for Indo-China's rubber; but the Commander-in-Chief, China, who had been striving to divert this, one of Germany's main deficiencies, could see little prospect of our being able to intercept many cargoes sent from Indo-China to Europe by sea.

Germany's invasion of Russia, though it bewildered the Japanese, removed the restraining influence on their western flank. Their reaction to the event was unequivocally expressed in an intercepted message of 31st July from Tokyo to the Japanese Embassy in Washington.¹

'Needless to say, the Russo-German war has given us an excellent opportunity to settle the northern question,² and it is a fact that we are proceeding with our preparations to take advantage of this occasion.'

47. FREEZING OF JAPANESE ASSETS

The constant expansion of Japan's military position in the south-west Pacific had already substantially imperilled the security of the United States as well as Britain and the Netherlands East Indies. In his address to Congress on 6th January, 1941, President Roosevelt declared that 'at no previous time has American security been so seriously threatened from without as it is to-day.' The leaders of Japan, said Mr. Cordell Hull, the United States Secretary of State had openly declared their determination to achieve and maintain by force of arms a dominant position in the Western Pacific. Japan's further expansion into southern Indo-China in July 1941 virtually completed the encirclement of the Philippine Islands and placed Japanese armed forces within striking distance of vital trade routes, thus in the opinion of the United States Government directly menacing the security of the country and other powers that were at peace with Japan, and creating a situation in which the risk of war became so great that these Powers were confronted no longer with the question of avoiding such risk but with the problem of preventing a complete undermining of their security. Moreover, no sooner were Japanese military forces moved into southern Indo-China, than they began consolidating themselves there for further southward expansion, and evidence of Japanese clandestine infiltration into Siam began to appear.

The British War Cabinet considered the most likely way to halt the Japanese movement in Indo-China would be a joint declaration by the United States, Dutch, British and Dominion Governments that an attack on the territory of any one would be considered to affect the vital interests of the others. They were convinced that Japan would make no further move if such a declaration made it plain that she would thus be led into war with the United States.³ At the time however, there was no hope of the United States making such a declaration of policy, for Mr. Cordell Hull, the Secretary of State, had just begun

¹ *Investigation of the Pearl Harbour Attack*, Senate, 79th Congress, Document 244, p. 15.

² Presumably Manchukuo.

³ SP (41) 548 (S) 15th July 1941.

an unofficial attempt to induce Japan to halt her aggression and compose the differences between the two countries. The limit of the rope accorded to Japan was reached a few days later. On 25th July the Japanese Minister for Foreign Affairs, Mr. Matsuoka, informed Mr. Grew, the United States Ambassador in Tokyo that the Vichy Government had agreed to admit Japan to a joint protectorate of Indo-China. Reaction in London and Washington was immediate. Next day, Great Britain, the Dominions and the United States, acting in concert, froze Japanese assets, both as an open warning to Japan and as a measure of self defence to prevent the accumulation by the Japanese of materials required for war. Holland and the Netherlands East Indies adopted a similar course a few days later. The order for freezing Japanese assets brought under control of the Governments concerned all financial and import and export trade transactions in which Japanese interests were concerned. Trade between the Associated Powers and Japan virtually ceased.

The effect of the restrictions, added to those already in operation, was the strangulation of Japan. For a year Great Britain had been restricting trade with Japan by export licence. A comprehensive scheme of economic restrictions on Japan had been evolved in recent months and was now in operation throughout the Empire with the collaboration of the Netherlands and United States governments. Sales of strategical materials, iron and steel scrap, nickel, ferro alloys, aluminium and rubber had already been cut off before the new financial measures were imposed. From now onwards Japan's stock piles of commodities imported for purposes of war would dwindle. Already production of steel was down by a quarter, owing to shortage of raw materials. Within a measurable period of time under these conditions Japan's powerful Combined Fleet would be immobilized through exhaustion of oil stocks, and the strongest card in her hand, the possibility of naval domination of the Pacific and Far East, would become useless. In these circumstances the position of Japan was becoming untenable. She must either go forward quickly or give up everything for which she had striven since she commenced her career of aggression with the annexation of Formosa, nearly half a century earlier. She went forward.

48. JAPANESE PREPARATIONS FOR WAR

On 2nd July an Imperial Conference was held at Tokyo at which 'the fundamental national policy to be taken toward the present situation was decided,' following which Japan proceeded in much intensified measure with the menacing preparations which were regarded—at least in Washington—as a possible preface not only to attacks on British and Dutch possessions in the Far East, but also on the Philippines and Hawaii, and even on the Panama Canal itself. Japanese preparations foreshadowed a major war. Extensive overseas expeditionary troop training was undertaken; a hundred thousand troops were stationed in Formosa and Hainan; the Mandated Islands were reinforced with submarines and aircraft and the land defences strengthened. Improvements were made to airfields and bases in Formosa and in the Paracels, a group of Chinese Islands lying on the western side of the main route between Singapore and Hong Kong where in 1937 the Admiralty had considered forming an advanced base.¹ Similar improvements were made at Spratly Island, in the South China Sea, 900 miles north-east of Singapore, formerly claimed by France and annexed by Japan in 1939 and at Saipan and other islands in the Japanese mandated territory. Reserves of oil fuel were stored at strategic points

¹ M.00625/37, M.04254/38.

such as Itu Aba, an uninhabited island in the South China Sea in latitude 10° 23' N., long. 114° 21' E., and Lord North and Tobi Islands in the south-west Carolines. At Itu Aba the Japanese were reported to have also formed an airfield. Between one and two million reservists and conscripts were called up for service; Japanese merchant ships were suddenly recalled from the Atlantic; travel restriction and censorship of mails and communications were imposed in Japan; and conditions were generally imposed throughout the Empire presaging a major military effort. The Japanese press dwelt constantly on the theme that Japan was being subjected to a pressure never before approached in her history, and uttered warning that if the United States took further action in the direction of encircling Japan, Japanese-American relations would face a final crisis. This false propaganda was clearly designed to accustom the Japanese public to the notion of further military aggression.

49. THE ATLANTIC CONFERENCE

If at this juncture there was any possibility of halting Japan it could probably only have been done in the manner proposed by Mr. Churchill when he discussed the situation with President Roosevelt during the Atlantic Conference in August 1941 at which the Atlantic Charter was drawn up. The Prime Minister submitted a proposal for parallel declarations by the United States, British and Dutch Governments warning Japan against further aggression. This was the second occasion within six months (the first was in February 1941) that Mr. Churchill had urged on the President his desire for some action by the United States to deter Japan. The President now agreed that he would warn Japan that further aggression would lead to war, employing a certain form of words drafted by Mr. Churchill himself.¹ This was a great step forward, as the War Cabinet recognized. It proved in the end too great a step for Mr. Roosevelt. At this juncture both Britain and the United States badly needed time to develop their military potential, and the President felt that 'every effort should be made to prevent the outbreak of war with Japan.' As a consequence the warning to Japan was translated into diplomatic language in which the word 'war' had no place.

On 24th August after his return from the Atlantic Conference Mr. Churchill broadcast to the British nation. Even at this hour no absolutely firm support in the Far East could be counted upon from the United States and in regard to Japanese aggression the Prime Minister could utter no warning more trenchant than 'It is certain that this has got to stop. Every effort will be made to secure a peaceful settlement. If these hopes should fail we shall of course range ourselves unhesitatingly at the side of the United States.' Mr. Roosevelt had already given his warning privately to the Japanese Ambassador Admiral Nomura on 17th August. It contained no suggestion that he had in mind the interests of any other country than the United States.² The President referred

¹ Telegram from Prime Minister to Foreign Office, Tudor No. 19 dated 12th August 1941.

² The draft to which Mr. Roosevelt agreed at the Atlantic Conference ran as follows:—'Any further encroachment by Japan in the South-west Pacific would produce a situation in which the United States Government would be compelled to take counter-measures even though these might lead to war between the United States and Japan.' (Tel. Tudor 19.)

What he actually read out to Admiral Nomura was as follows:—'The Government of the United States will be compelled to take immediately any and all steps which it may deem necessary toward safeguarding the legitimate rights and interests of the United States and American nationals and toward insuring the safety and security of the United States.' (*Investigation of the Pearl Harbour Attack*, Senate, 79th Congress, Document No. 244.)

to a proposal he had made on 24th July, for the 'neutralization' of Indo-China. Admiral Nomura countered with a proposal for a secret meeting between President Roosevelt and the Prime Minister of Japan, Prince Konoye. This, Mr. Roosevelt shelved¹: it was considered that no agreement could be reached and the Japanese military leaders would thereupon certainly make propaganda by placing the responsibility for failure on the U.S.A.

The two warnings did nothing to cause Japan to halt her war preparations, and the situation was so menacing that H.M. Government advised British residents to leave Japan, a step which the U.S. Government had taken nearly twelve months previously, in October, 1940. There was still some uncertainty both in Singapore and London as to her intentions. The Commander-in-Chief, Far East, believed she was preparing to attack Russia, 'The last thing Japan wants at this juncture is a campaign in the south' he telegraphed on 1st October. The Joint Intelligence Sub-Committee of the War Cabinet, however, in an estimate of Japan's intentions dated 18th November placed the Russian Maritime Provinces last on the list of likely objects of attack, and considered that occupation of bases in Siam, besides incurring the least risk of a major conflict, would be a sound preliminary to subsequent operations against Malaya or the Netherlands East Indies.

50. WAR BREAKS OUT

During the period that elapsed before hostilities began Japan continued secretly to prepare strategical positions in the South China Sea and Pacific, including the Mandated Islands, from which to support her assault. These activities which were not entirely concealed from us decided the Foreign Secretary to ask the Defence Committee to give immediate consideration to the possibility of sending capital ships to reinforce the Far East. The Prime Minister, as Minister of Defence, had already proposed in August that one of our latest battleships of the *King George V* class should be sent out, to be joined by the *Repulse* or *Renown* and a fast aircraft carrier: a squadron which he considered would act as a deterrent against the Japanese.² Now in October, with the deterioration in the situation, Mr. Churchill seems clearly to have envisaged the imminence of war with Japan, in which case the main danger would be from attacks on our trade by Japanese battle cruisers and cruisers. The presence of a fast striking force in Eastern waters, particularly before war had begun, was, he believed, the only thing that would induce caution in the Japanese. These views so far prevailed that the First Sea Lord suggested the *Prince of Wales* should be sailed forthwith to Cape Town, a decision as to her subsequent movements being taken when she arrived at her destination. Even before the ship sailed from the Clyde on 25th October, however, it was decided that she should go through to Singapore being joined by the *Repulse* which was already in the Indian Ocean. At this critical juncture the *Indomitable* the aircraft carrier earmarked to complete a balanced force, suffered damage in grounding, and no other was available. For screen, only four old destroyers could be found.

The move to Singapore was made in secret and had no effect on Japan whose war plans included measures to deal with an even stronger force than this in the Indian Ocean. By the autumn she was ready. The time was propitious.

¹ He did not definitely refuse the request for a meeting.

² Personal minute to the 1st S.L., 25th August 1941.

The principal world powers who normally maintained the *status quo* in South-East Asia were absorbed in the war in Europe. Britain was extended to the utmost in the war with Germany and Italy. France and Holland were prostrate. The U.S.S.R. was fighting at the very gates of her capital. The United States was preoccupied with the support and preservation of Britain and her allies, in which the West had precedence over the East. China was desperately short of war material and most of her industries and communications were under Japanese domination. Japan now moved rapidly. On 16th October Prince Konoye resigned, and next day—the day on which the U.S. Navy ordered all American ships in the Pacific to put into safe ports—a new Japanese Government was formed under the Xenophobe General Hideki Tojo, who besides being Prime Minister, retained the offices of Minister of War and Home Affairs, thus becoming little short of military dictator. General Tojo lost no time. The Japanese Navy was placed on a war footing. The plan, already prepared, to attack Pearl Harbour was approved on 3rd November; and on the 5th the United States Government learnt through an intercepted message from Tokyo to the Japanese Ambassador in Washington, that if by the 25th of the month (later extended to the 29th) the U.S. had not agreed to the Japanese 'absolutely final proposal' Japan had decided upon war.

Although the decision to commence hostilities was made in Tokyo at a Cabinet Council on 1st December, conversations between the Japanese Ambassador, Admiral Nomura, assisted by a special envoy, Saburo Kuruu, and the U.S. Secretary of State, Mr. Cordell Hull, which had been going on, with only one interruption, since May were continued. On 6th December, President Roosevelt sent a message to the Japanese Emperor asking for troop withdrawal from Indo-China: 'Developments are occurring in the Pacific area which threaten to deprive each of our allies of the long peace between our two countries. . . . It is clear that continuation of such a situation is unthinkable.' On 7th December Japan attacked the United States at Pearl Harbour, Hawaii at 1.20 p.m., Washington time.

CHAPTER IV

MILITARY POTENTIAL OF JAPAN

(See Appendix C, D)

51. THE IMPONDERABLES IN JAPAN'S POSITION

Blockade of Japan in war time, though slow to take effect, was recognized as one of the most effective methods of defeat. Dearth of information rendered it very difficult, however, to form a true picture of Japan's economy. The publication of statistics on most industries had been prohibited by the Japanese since 1929. Little was known about some of the most important shipbuilding and repair yards. Information on Japanese docks and port facilities was out of date. As late as 1945, information was still being sought which would enable her reserves of oil on the outbreak of war to be determined. The eventual discovery that the Japanese were using a conversion factor of 6 koku per ton of brown rice, whereas research analysts used a factor of 6.838, caused an error of 12 per cent. in an important part of the food estimates.

This paucity of information resulted in two views which persisted throughout the war: one that Japanese production was low and their economy weak and starving, the other that productive capacity was high and stock piles sufficient to keep the economy powerful and well supplied until very late in the war. In the main, the first view more nearly represented the true position, for the protagonists of the second failed, generally, to make sufficient allowance for two facts which constituted a most serious drag on Japan's war effort, namely that from the very outbreak of war her industries were short of raw materials, and secondly that the Japanese were incapable of planning and directing efficiently the vast, intricate industrial-governmental complex necessary for modern war. Errors or oversights in planning were common. Thus during the first year of war, when a great increase in steel production was necessary, the Japanese were stiffening the specifications for finished steel, thereby increasing the rejections. Again the oil shortage which did so much to bring the war machine to a standstill, was badly aggravated by the failure to build tankers, the construction of which during the three years 1940-1942 amounted to no more than 60,157 tons.¹ These are only two examples of many.

Statistical analysis alone, however accurate, does not give a true picture of a nation's strength in war. Strategical economic intelligence must also take into account the psychology, educational level, social organization and customs of the people: imponderables which have an important bearing on moral and competence and consequently on the fighting power of a nation. There was an absence of a sense of urgency in the psychological attitude of the Japanese administrative group towards the war during the first eleven or twelve months, which was responsible for failure to anticipate the need for substantial increases in production and a selective approach to the problem involving redeployment of facilities and materials. The consequences of complacency were that the import of raw materials was not prosecuted with sufficient vigour and the shipping position was allowed to deteriorate through sinkings until it became

¹ In this chapter, years referred to are fiscal (April-March) and tons metric (2,204.6 lb.) unless otherwise stated.

impossible to restore it. It must be admitted, however, that when the true military situation was recognized any complacency was quickly transformed into a supreme economic effort. But—

‘Accounting practices were so poor and the official language so ambiguous, that control agencies were never able properly to regulate the distribution of materials.

To the very end, no single and effective centre of authority for the allocation of materials was established, and ultimate decisions were often the result not so much of considered combined judgment as of bitter wrangles in which the strongest voice prevailed.¹

Many of these wrangles occurred between the two fighting services.

‘Materials were sometimes channelled into low priority industries because the only way to keep peace between the army and the navy was to give each 50 per cent. of available supplies.’

Not thus is world power achieved.

52. JAPANESE INDUSTRIAL POTENTIAL

At the beginning of 1942 Japan was not yet really fit to fight for world domination on the projected scale. The meagreness of her industrial capacity and resources generally rendered it impossible for her to support a long war against nations with resources as deep as those of the United States and Britain. Her economy had no reserves: she could deliver one tremendous blow, and thereafter little. Although Japanese industry had made remarkable strides during the decade preceding the outbreak of war, progress was insufficient to bring her within measurable distance of the vast United Nations' potential. Being of recent development Japanese industry had little excess capacity. A single basic industry, steel, will serve to show the gulf between Japanese and United Nations resources. In her peak year, 1943, Japan, with Korea and Manchukuo, produced less than nine million tons of ingot steel. British production at peak (1944) was over twelve million tons, whilst the United States produced in her peak year 1944 over eighty million tons. The comparatively low production of iron and steel was a prime limiting factor for the whole Japanese war economy.

During the period 1930–1940 Japan modernized her basic mining industries, the production of steel (of which in 1932 she became a net exporter), many branches of chemical manufacture, the metal and engineering trades, and a wide range of manufactures. The traditional production of manufactured articles in a multitude of small workshops, though still actively pursued, was tending to give place to concentration of output in large and well-equipped plants. Nevertheless, in the large-scale industries such units were generally smaller than those in the West, particularly America, and less highly specialized. During the decade under review, the range of manufactured products was steadily increased and their quality improved. The heavy industries, basic to military strength, shared this progress. By 1941 Japanese foundries could supply the largest and most elaborate iron and steel castings. Boilers and prime movers of all kinds, especially steam turbines, were manufactured in

¹ *The Effects of Strategic Bombing on Japan's War Economy*, pp. 23, 73.

quantities adequate to meet virtually all domestic demands. Power plants of the highest pressure and temperature could be designed and manufactured. The range of manufactured products was steadily increased and rapidly improved.

Many kinds of machine tools were developed, thus fostering the use of machinery and rendering possible significant progress in the standardization necessary for adoption of mass production. The swing of armament industries into mass production, however, resulted in a serious drop in Japanese self-sufficiency in machine tools, necessitating increased reliance on imports. Moreover most Japanese tool makers produced only a limited range of sizes and types of standard machine tools such as were used in garages and jobbing and repair shops in Great Britain and the U.S.A. In the shipbuilding industry large machines such as guillotine shears, keelbenders, and radial drills were not installed on a large scale during the war. Japan depended almost entirely on the United States for gear making tools, and the shortage of gear-cutting machines during the war caused bottlenecks in the already small automotive and aircraft industries. The expansion and transformation to mass production of those two essential war industries was handicapped by the difficulty which the Japanese found in making jigs, fixtures and dies, and the lack of tool facilities for producing them expeditiously.

The production of their best power-driven machine tools was lowered by the deficiencies of their cutting tools. The life of Japanese machine tools was shorter than that of the European and American product. The Japanese had no opportunity in peace to accumulate stocks of high speed cutting tools. From the earliest days of the war shortages of certain important alloying elements coupled with the vast expansion in domestic production of machine tools called for by the war, affected quality, necessitating reducing speeds and feeds of machines, with most serious effects on production.

Another difficult problem in Japan's war economy was presented by the ball and roller bearing industry, the importance of which was very belatedly recognized. The Japanese were unsuccessful in last-minute attempts to accumulate a reserve stock of bearings, and only a fraction of their requirements got through the blockade. Japanese steel for both races and steel balls was inferior, and imported stocks covered only those popular sizes on which Japanese manufacturers had concentrated in peace time. They had also failed, by 1941, to overcome serious technical obstacles impeding their production of fine precision bearings, and were forced, in consequence, to replace the latter with ordinary bearings wherever possible.

53. MANPOWER

The serious obstacles to expansion of the Japanese armament industries presented by technological problems, were aggravated by the shortcomings of labour. In the primitive state of Japanese agriculture nearly half the total civilian labour force was absorbed by agriculture, forestry, and fishing. Although, compared with materials there was a relative surplus of manpower, this was not efficiently exploited. No actual labour reserve of unemployed industrial workers existed in peace-time. After drastic drafting of women students were called on, and it is reported that more than three million were placed in industry during the war. The low efficiency of industrial workers, by western standards, was due to the short time, no more than sixty years,

since Japan began to emerge from a medieval state into industrialism. Facilities for training new workers while maintaining full industrial production, were limited; and in the absence of a tradition of mass production it took longer to develop competent workmen. The supply of trained labour was insufficient in all fields in which expansion up to western levels was attempted. The strict caste system prevented advancement of suitable mechanics to positions of authority. Management was frequently inefficient because uninformed on technical problems. Technical education placed too much stress on design and not enough on production techniques.

The shallowness of Japan's industry resulted in failures of production to fulfil estimates. This was due principally, it seems, to the shortage of raw materials that was felt almost from the commencement of the war, owing to the drop in imports caused by the severe losses of ships from submarine and air attack. This had a natural repercussion on the carrying out of war plans, for it became impossible for commanders to rely on receiving the weapons assigned to them. It had also the effect of causing a catastrophic fall in industrial output in the autumn of 1944, when production had reached its height. From the decline which then occurred no recovery was possible.

54. ECONOMIC SITUATION OF JAPAN

The two main factors in the economic situation of Japan were that the country was almost self-supporting in food in peace-time, though not in war; but was heavily dependent upon outside sources for supplies of raw materials of every description necessary not only for war, but for the support of peace-time existence. Almost the whole of such materials, except petroleum, rubber, certain metals and a fifth or less of her iron ore requirements were available, however, in an area that included Japan herself, Korea, Manchuria and North China, which, with the addition of Formosa and Karafuto may be said to have constituted Japan's 'Inner Zone.' The outer zone comprised the Japanese mandated islands and the new conquests in the south made after the outbreak of war. It was primarily a source of raw materials; and Japan's need for the petroleum and rubber of the rich southern region, particularly the Netherlands East Indies, sufficiently explains her determination to obtain control of that area, even at the cost of a major war. But it was a source of weakness that this vital region was connected by a long and inherently vulnerable line of communications with the home islands where almost the entire Japanese industrial potential was concentrated.

The economic importance of the inner zone was such that in war retention of the principal areas and continued development of their resources was indispensable to the Japanese war economy; hence, for ability to keep in the war Japan depended on the maintenance of communications with Korea, Manchuria and North China: the more so, since the basic industrial raw materials available in the home islands were largely of inferior grade as well as inadequate in quantity.

Processing capacity and war industries were concentrated almost wholly in the inner zone. This zone supplied virtually all the pig iron, steel ingots and rolled steel for use in finished products; possessed more than nine-tenths of the processing capacity and coke ovens, a similar percentage of the coal, and over 80 per cent. of the industrial salt, basic for a number of important chemicals. Although the greatest contribution to these figures was that of Japan herself, the proportion supplied by Korea, Manchuria and North China

could not be forgone. These countries, though they possessed but a small proportion of the processing capacity, contained more than half the coke ovens and provided more than two-thirds of the iron ore, about a fifth of the steel, 40 per cent. or more of the pig iron and coal, including the coking coal of North China on which the Japanese, Manchurian and Korean steel industries almost entirely depended, and nearly two-thirds of the industrial salt.

Stock-piling or the use of substitutes made good the deficiency of most of the commodities in which the inner zone was not self-supporting, though apparently not of rubber, one of the only two essential commodities of which there was no domestic production, the other being nickel ore. Japan apparently began the war in a highly precarious state with regard to crude rubber, of which there actually was less than 500 tons on hand. Annual requirements, as already noticed, were 65,000 tons. The agreement with Indo-China and Siam was expected to produce 45,000 tons, and the Japanese relied on making up the deficiency either by procuring an increased amount from those countries, or securing a supply from the Netherlands East Indies. Japan was able, as events proved, to safeguard her position adequately in this manner. It was believed before the war that she was stock-piling rice from Indo-China, but according to the Japanese this was not the case. Domestic production of this basic food stuff amounted to 94 per cent. of the total requirement, French Indo-China and Siam being relied on for the remainder. As the war went on food grew short, the result of poor harvests and transport difficulties. This necessitated a general reduction of rations which on 1st June 1944 affected even the Army in Japan, Korea, Formosa and Manchuria.

The employment of substitutes from both the inner and outer zones made up for the shortage of cotton, wool, and jute which developed in Japan in 1942; for though the country was in peace-time the world's largest exporter of textiles she depended upon imports of raw cotton for their manufacture.

The Japanese could overcome many of the deficiencies in non-ferrous metals by means of substitution of one for another, or of steel or a non-metallic substance for a non-ferrous metal, whilst the shortage of others could be compensated by stock-piling.

The principal non-ferrous metals for which they depended either on the outer zone or extra-oriental supplies were the copper and nickel of the Netherlands East Indies, lead of Burma, zinc of Burma and French Indo-China or the Philippines, tin of the Netherlands East Indies and Malaya, larger or smaller stocks of all of which were accumulated in Japan: and the highly important commodity, aluminium, critical raw material of the aircraft industry, and one on which Japan relied heavily in her war and peace-time economy. From December 1941 until the following spring she was forced to live on her stock-pile, but after the conquest of Malaya and the Netherlands East Indies she drew most of the bauxite from which her aluminium was principally derived, from those areas. Since the refineries were all situated in Japan itself import over the long sea route from Singapore required a considerable amount of shipping, one of Japan's weakest points. An alternative source of aluminium existed in the alumite and aluminous shale in Korea and Manchuria, in which countries, too, the plants capable of handling those ores were mostly situated. This latter advantage was offset by the relative inferiority of alumite and shale compared with bauxite. To refine these ores in Japan itself would have necessitated considerable additions and alterations to her existing plants, whilst the greater bulk of the inferior ores would have had to be weighed against the comparative shortness of the sea routes from Korea and Manchuria.

At the end of 1944 bauxite stocks had reached vanishing point, and though a belated effort was being made to transfer to the use of aluminous shales conversion of plants had been delayed too long. By drastic channelling of aluminous supplies into the aircraft industry the necessary quantities were obtained; but had it not been that aircraft production failed for other reasons to meet its schedules the picture might have been very different.

Industrial salt was another of the commodities the domestic production of which was extremely small, being only a tenth of the total annual requirement of 1½ million tons, while the pre-war stock-pile amounted to no more than 100,000 tons. Most of the deficit was imported from China and Manchuria, with smaller amounts from Indo-China and Siam.

55. COAL

The deficiency of oil in Japan rendered her almost entirely dependent on water power and coal for industrial energy. It is estimated that about two thirds of the total energy consumed by the Japanese war economy in 1943 was derived from coal, compared with a figure of 50 per cent. for the United States and 90 per cent. for Germany. Disruption of the supply of coal would have resulted in widespread paralysis of the nation's war production.

Despite this dependence Japan's annual production of coal never attained the modest minimum goal of 60,000,000 tons set by the government early in the war. Nearly all the Japanese coal was medium to low grade bituminous, unsuitable for making good metallurgical coke unless blended with imported coal. Especially important to the war effort, therefore, was coking coal from the North China-Inner Mongolia region (96 per cent. of all import) and to a much smaller extent from Karafuto (southern half of Sakhalin Island), on which the iron and steel industry depended for efficient functioning.

It was a source of weakness that the coalfields in Japan were poorly situated with respect to the principal centres of consumption. For instance, the bulk of the coal used in the industrial concentrations of central Honshu had to be brought 250—600 miles from mines in Hokkaido and Kyushu and other areas in the Inner Zone along shipping lanes which were in part accessible to submarine attack from the beginning of the war and within range of Allied air attacks in the final months. The war-time output of Honshu, never more than 15 per cent. of the total coal production of Japan proper, furnished only about one-fourth of the coal used on that island. In 1941, of the 31,862,000 tons mined in Kyushu, 13,823,000 were sent to Honshu, as were 7,329,000 of the 15,247,000 tons produced in Hokkaido, where alone in Japan proper small quantities of coal suitable for coking by itself were found. Prior to the war, all shipments were by water.

Transportation was thus a very vulnerable point in Japan's coal complex, and by June 1945, the shipping shortage and the interference with sea lanes had practically cut off all imports of coal. Inter-island movement of coal to Honshu by water had been reduced to little more than a quarter of the 1942 volume, resulting in an acute dependence on railways.

56. STEEL

Dependence on sea transport was reflected also by the geographical location of the steel industry within Japan proper and the lack of raw materials. When the industry was first established in 1874 plants were located in relation to sources of domestic raw materials. The Kamaishi plant, the first to be established in Japan, was placed close to the northern Honshu iron mines; the

Yawata plant (1901) was placed near the Kyushu coal fields; and the Wanishi plant, completed during the First World War, was located close to Hokkaido coal and iron. As the industry grew and raw materials became indispensable, new concentrations sprang up in the seaports of Central Honshu near the steel-consuming centres of Kobe-Osaka, Nagoya and Tokyo Bay.

Japan was seriously deficient in the raw materials necessary for a large-scale, integrated iron and steel industry. Neither iron ore, high quality coking coal, scrap iron and steel or ferro-alloy ores existed in adequate quantities within the country. After the iron ore shipments from Malaya and the Philippines were stopped by economic embargo in 1941, China (including Hainan Island) became the largest supplier of iron ore, as she was of coking coal. When Manchukuo came under Japanese control the steel industry expanded and the country became an important source of pig iron and ingot steel. The Korean steel industry was less important, but in addition to some pig iron Korea supplied increasing amounts of iron ore to Japan. Requirements of iron ore were 6½ million tons in peace-time, rising to 10 million tons in war. Japan herself produced nearly 4 million tons in 1941. Imports from the Philippines and Malaya were relied on to make up the required amount in future years.

The paucity of suitable domestic coking coal and iron ore, the two most necessary raw materials for the blast furnace, rendered Japan heavily dependent on scrap instead of pig iron in the making of steel. However, as the use of steel in Japan was a comparatively recent phenomenon, the amount from which an annual supply of scrap could be obtained was small. Imports of scrap, which came mainly from the United States were consequently essential. Substantial imports of ferro-alloy ores and concentrates, more, in fact, than could be developed, were also essential to supplement domestic production. The Japanese met the situation as far as possible by economizing from the outset of the war.

The creation of a strong steel industry had been taken in hand by the Japanese Government in 1917. Expansion was encouraged by the usual means at the disposal of governments, and in 1937 Japan proper produced 5,800,000 tons of ingot steel and was the sixth in order of the countries of the world, though but a dwarf compared with the United States, whose output in that year was 51 millions, while even Great Britain, fourth amongst producers, had an output of 13 million tons. In 1938 a five-year primary production expansion plan for the critical industries was drawn up in which steel was given first priority. By 1942 it was hoped to more than triple pig-iron capacity, increase ingot steel by 125 per cent. and finished steel by 85 per cent. in Japan, Korea, Manchukuo, and China. The emphasis laid on increasing pig iron production was in conformity with the goal of self-sufficiency within the Japanese sphere of influence; by reducing the ratio of scrap to pig iron Japan's dependence on potential enemies such as the United States was to be diminished. Although the war commenced a full year before the end of the five-year expansion period, a remarkable degree of success had been achieved by 1941. The total metallurgical coke and pig-iron capacity in Japan, Korea and Manchukuo had more than doubled since 1937, while significant, though smaller, gains were made in ingot steel and rolled steel products capacity. Expansion apparently continued up to the last year of the war.

57. PETROLEUM

The import problem most difficult to solve was that of petroleum, on external supplies of which the Japanese Empire was dependent to the extent of 90 per cent. of its needs. With the exception of Mexico, all practical sources

of supply of oil were controlled by British, Dutch and American interests. Consequently, the situation was that Japan could only make an attack upon British, Dutch and American interests with stocks of oil previously acquired from precisely those same interests.

To assist the home refining industry and provide reserves of oil for war the Japanese in March 1934 passed the Petroleum Industry Law, which required all foreign oil companies to keep in Japan a six months' supply of crude oil and to construct storage equipment and refineries. Nevertheless, the refining capacity of Japan increased by 1941 only to a point where it sufficed to meet half the normal needs of the Empire.

Until 1940, most of the oil imports of the Japanese Empire were supplied from the United States (82 per cent. in 1939). In the summer of 1940, however, it appeared not unlikely that America would put an embargo on oil for Japan. At the time, Holland had been occupied by Germany and her Queen and Government were in England. The United Kingdom was facing the Battle for Britain. The Japanese saw their opportunity to satisfy their urgent need by acquiring some control over the oil resources of the Netherlands East Indies; and under strong Japanese pressure the Royal Dutch Shell and Standard Oil Companies, which controlled the resources of the area, in November 1940 entered into an agreement (the Batavia Agreement) to increase the supply of oil from the Netherlands East Indies by an amount which should have reduced Japanese dependence on imports from the United States to half her total needs. Nevertheless, despite these increased deliveries from the Netherlands East Indies, shipments of oil from the United States to Japan reached an average for November and December greater than the monthly average of 1939, before the Batavia agreement, thus apparently indicating an increased rate of stock piling, which was confirmed by shipments of steel oil-storage tanks to Japan.

The Batavia agreement had been negotiated with the knowledge of the British, Dutch, and American governments. The British Government was however concerned at the situation and in 1940 examined the possibility of taking action to prevent Japan from accumulating further stocks of this essential commodity, without which the Japanese Fleet and Air Force could not move nor the country's industrial effort be maintained. The problem of the Associated Powers was to impose on Japan restrictions which while preventing an addition to oil stocks were not so drastic as to force a heavy use of reserves which might incite the country to war. Some restriction was imposed in 1941 by the refusal of clearances for Japan of United States flag tankers; but the difficulty of agreeing on the point where accumulation of Japanese stocks must be checked for a time prevented co-operative action by Great Britain and the United States, and Japan continued to be served by certain Norwegian and other Allied tankers, as well as by tankers owned by United States interests but sailing under the Panama or other flags. There were also a few 'free' Panama and other neutral tankers. The movements of these tankers were actually facilitated by Great Britain with ship's warrants.

It was difficult for Great Britain and the United States to agree on the imposition of restrictions in the absence of reliable figures of stocks and consumption. Stocks at the end of 1939 were assumed to be of the order of 5,250,000 tons or slightly higher.¹ Two years later, on 1st October 1941, they

¹ The figures for tons, when referring to petroleum in this chapter are for long tons (2,240 lb.). A conversion factor of 250 gallons to a ton has been applied to the kilolitres (220.097 gallons) in which the figures are given in Japanese reports.

amounted, according to Japanese report, to 7,964,000 tons. The British estimates of the total Japanese consumption in a war in which the Japanese Navy was fully occupied were between 7 and 7½ million tons or more annually. The Japanese estimate was very much lower, 4,840,000 tons, made up as follows:—

Naval consumption	2,200,000 tons
Army consumption	528,000 tons
Civilian requirements	2,112,000 tons

In 1943, whilst Japan was still in occupation of practically the whole of her conquests, the Allies estimated that out of a total consumption of 7,430,000 tons the Japanese Navy and Merchant Marine used some 4,857,000 tons. The tonnage employed in supplying this requirement depended on the position and operations of the Japanese Fleet. For example, the great Midway operation in June 1942 tied up a large amount of oiler tonnage in waters far distant from the source of supply in the Southern Area. The forcing of Japan back into the Inner Zone, however, naturally resulted in reduced consumption of oil fuel by the Merchant Marine.

Borneo and the Netherlands East Indies produced more than sufficient oil to meet the needs of the Japanese Empire, and by the time war broke out these countries possessed the necessary refining capacity to turn this crude oil into gasoline, lubricating oils and other products, as well as facilities for the manufacture of large quantities of aviation spirit for the production of which much of the N.E.I. oil was especially suited. The two most important oil centres were Palembang in South Sumatra and Miri in Sarawak, followed at some remove by Tarakan and Balikpapan in Borneo. The Rantau field (Medan) in North Sumatra was potentially valuable as being with Palembang one of the only two sources of aviation crudes.

At the instance of the Commander-in-Chief, China co-ordinated schemes for the destruction and denial of British and Dutch oilfields in the event of attack were drawn up with the Netherlands East Indies authorities in the early part of 1941. It would take many months to repair the oil-wells and probably more than a year to rebuild the refineries, even if the necessary materials were obtained, and to this extent Japanese exploitation would be delayed. Such materials were in fact, at that time, readily available only in the United States.

The Japanese apparently intended to step up very considerably the output of synthetic oil during the war, but this expectation was not fulfilled. The production of shale oil and crudes was, however, developed in the Inner Zone, principally in Japan (including Karafuto) and Manchuria. As far as can be ascertained, the Japanese did not expect that increased domestic output and the production of occupied territories combined would provide for all war-time requirements. Stocks would have to be drawn on to make good a deficit which would be very large indeed during the early part of the war, before oil began to come from the south, though the Japanese apparently hoped that the large stock accumulated before the war would see them through.

During the war Singapore became an important centre for petroleum shipments, brought either in small tankers from Palembang where depths in the river were small, transshipment being undertaken at Singapore, or in tankers only partially loaded at Palembang and filled up at Singapore. When shortage of shipping developed and the route through the South China Sea became difficult in the Spring of 1944, the bulk of the Japanese Fleet was stationed at Lingga Anchorage, near Singapore, close to the oil producing areas. After the

virtual destruction of the Fleet at the Battle for Leyte Gulf in October 1944 and the return of the surviving ships to the home islands, Japan was reduced to such straits that in April 1945 she was hard put to it to assemble 2,500 tons of oil fuel for a sortie by her one remaining fast battleship accompanied by a small screen.

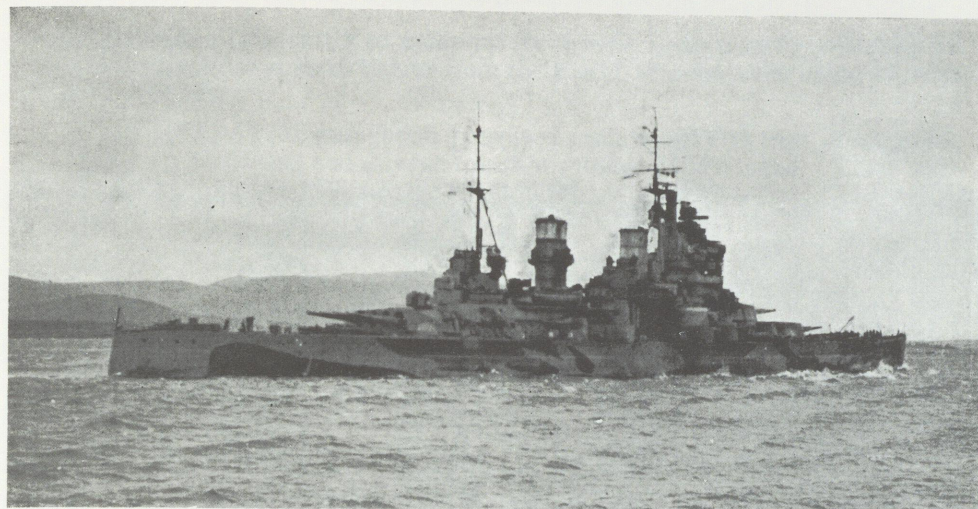
58. RAIL TRANSPORT

The Allied campaign against shipping compelled the Japanese after the early months of 1943 to shift a constantly increasing portion of the large coastal ship traffic to the already heavily laden railway system. Railway Transport capacity increased steadily from 150 million tons in 1941 to 190 million tons in 1944. A serious decline to no more than 90 million tons was expected, however, after March 1945, mainly owing to the shortage of rolling stock, and it was considered probable that after the middle of the year railway transport would become confined to local movements. Though Allied air attacks on the Japanese transport system did not begin until near the end of the war, the situation indicated above was brought about partly through strategic bombing and partly through lack of raw materials and fuels. Though bombing of urban areas caused very little physical damage to the railway systems it rendered workers homeless thus increasing absenteeism at the factories, and destroyed a considerable number of motor vehicles, the manufacture of which had been declining since the outset of the war due to diminishing steel allocations. Freights were thus driven increasingly on to the railways where the shortage of steel and other materials limited the replacement of worn out rolling stock.

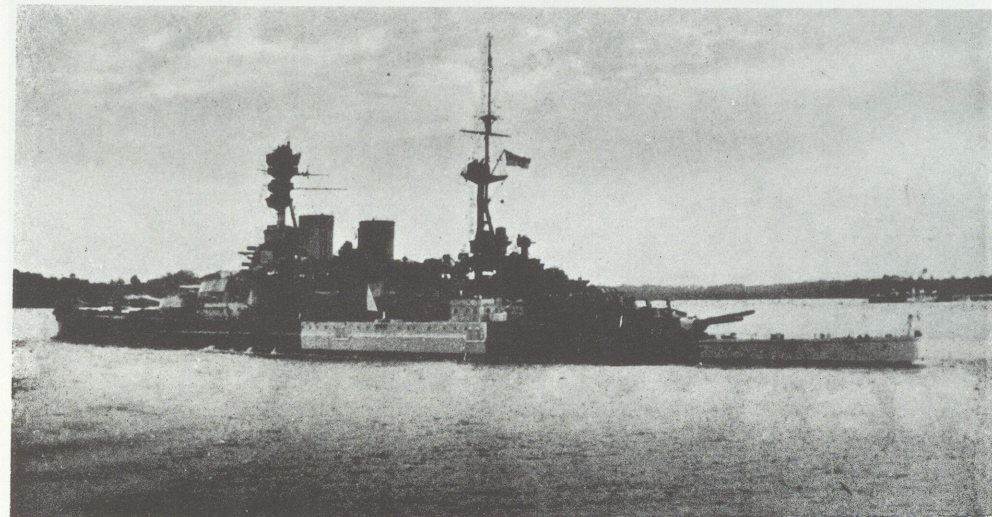
59. JAPAN'S MERCHANT SHIPPING

The Achilles heel of Japan was her shipping. Industrial development had rendered her increasingly dependent upon ships to provide essential raw materials and support a modern economy built upon developing foreign markets. Her growth as an industrial nation could not be sustained without shipping. Even home-produced coal was water-borne from northern mines to factories in the industrial south of Japan. War increased her requirements. The first six months, the months of conquest, gave Japan control of a vast area, scattered her armed forces far and wide, and imposed formidable problems of supply by ship. Simultaneously, the country was faced with the need to exploit without delay the resources of conquered territory separated by ocean hauls from the home islands, in order to replace the pre-war import trade and provide raw materials and food for the Japanese war economy. Another call which would have had an importance out of all proportion to its size, had the Allies concentrated earlier on sinking tankers, consisted in the demands made by naval operations on her tanker tonnage due to the lack of oil storage at the main Pacific bases such as Truk and Rabaul.

As a maritime nation with extensive domestic and foreign trade, a great naval power, and an aspirant to conquest Japan had developed a large and modern merchant marine, which was insufficient, however, even for her peacetime needs. The Japanese underestimated their probable war losses. Though shipping was their life line it was not until eighteen months after the commencement of hostilities, when more than one third of their merchant navy had been sunk, that they began to take steps to protect their ships. The measures taken were ineffectual in halting the downward trend of available tonnage. Shortage of raw materials and skilled labour rendered it impossible to increase the scale



H.M.S. *Prince of Wales*



H.M.S. *Repulse*



U.S. HELLCAT TAKING OFF

JAPAN'S MERCHANT SHIPPING

of shipbuilding sufficiently to make up for losses. Consequently, virtually all industries suffered in some degree from the loss of vital imports, many of them early in the war.

At the outbreak of war Japan possessed some 6,000,000 tons of shipping. Captures, acquisitions, and salvage together totalled 823,000 tons. There were 575,000 tons of tanker tonnage.

JAPAN'S MERCHANT FLEET, SELECTED MONTHS

	<i>End of Month</i>			<i>Total afloat tons¹</i>
December 1941	6,100,000
November 1942	5,946,000
December 1943	4,944,000
March 1944	3,966,000
October 1944	2,911,000
April 1945	1,961,000

Minimum requirements for naval and military purposes in this war of her own choosing were rather more than 4,000,000 tons, but dropped to 2,400,000 tons after the abandonment by Japan of outlying positions at the end of 1944. The maintenance of the import programme and the needs of civilian life apparently called for 2,850,000 tons. Losses caused by attack were progressive from the beginning of the war, but were particularly heavy from the early winter of 1943-44 onwards. Since shipbuilding capacity was inadequate to make good losses the balance of shipping available began to decline as early as April 1942; all pre-war estimates of anticipated damage were falsified, and the limitation of tonnage available soon imposed definite restrictions on Japanese military activity and general trade. Eventually, the Fleet had to be sent to Singapore to be near the sources of oil supply; rice, needed desperately in the home islands, accumulated at Saigon until the warehouses could hold no more; and as regards most of the products of the outer zone, except oil, shipping was of greater value to the Japanese than acquisition of the raw material itself: a fact easy to understand when it is borne in mind that 88 per cent. of Japan's total merchant shipping was sunk during the war.

In November 1943 losses, which in no previous month had approached 200,000 tons, rose to over 300,000 and in February 1944 to nearly 500,000. Twelve months later, after the loss of a further 3½ million tons the figure dropped like a stone. But the Japanese had no cause for self-congratulation: the improvement was due to the abandonment of their life line to the south. The effect of this on Japan was immediate, for stocks had long since been depleted and consumption was on a hand-to-mouth basis. Tonnage had to be laid up for lack of oil. In most of the important industries both quality and quantity had to be sacrificed. Local raw materials, often of astonishingly poor quality, were exploited as substitutes. Secondary scrap was used. Ferro-alloys and even aluminium became almost unobtainable. Food became so short that the remaining trickle of shipping was devoted almost exclusively to its importation. This resulted in a temporary improvement in the food situation, but in the summer, faced with the prospect of complete cessation of imports at an early date, as the blockade tightened, Japan had to impose a cut of 10 per cent. in the basic rations. From April 1945 until the surrender the

¹ All figures of tonnage in this section are G.R.T. and refer only to ships over 500 tons. These comprised 97 per cent. of the total Japanese shipping on the outbreak of war.

figures of losses remained at almost the lowest levels of the war, for the few ships left to Japan, chiefly slow, small and inefficient, were for the most part mined in her harbours. The country, with its economic basis of resistance destroyed, was sagging into collapse.

60. NAVAL CONSTRUCTION AND REPAIR

The beginning of Japan's large-scale naval shipbuilding programme was contemporaneous with her invasion of China in 1937. In that and the following year were laid the keels of the two 72,800 ton battleships *Yamato* and *Musashi*, armed with nine 18·1 inch guns, which were commissioned in 1941¹ and 1942 respectively. Modernization and repair of the fleet on a large scale had begun a year earlier, in 1936, and was virtually complete by the end of 1941 when there remained only one primary unit in need of repair. No new battleships were built after the *Yamato* and *Musashi*; one keel was laid, but the vessel was converted to an aircraft carrier before completion. Production of the latter type received impetus after the Battle of Midway where four carriers were sunk, and deliveries of completed aircraft carriers were consistently high until 1944 inclusive. They were the only major units whose numbers increased during the war. Their survival was due to the fact that after the Battle of the Marianas in June 1944 the Japanese were not able to put them to full use owing to the heavy attrition amongst their air groups. No heavy cruisers were added to the fleet during the war.

As materials became more scarce there was a shift in production from larger to smaller ships. The demand for escort and coast defence vessels became increasingly urgent as sinkings of cargo ships increased; and the production of submarines received impetus as these became the only remaining effective offensive naval weapon. In 1944 and 1945 the construction of large ships and aircraft carriers was either suspended or slowed down, and no keels were laid for any primary fleet units except destroyers and submarines, whilst the latter were now giving way rapidly to the production of special attack craft. In 1945 first and second priorities were given to special attack (suicide) aircraft and vessels of all types.

The number of primary fleet units completed during the war is shown in the following table:—

<i>Fiscal Year</i>	1941	1942	1943	1944	1945 (April–July)
Battleships	1	1	—	—	—
Aircraft carriers ..	5	6	3	4	—
Cruisers	1	2	2	1	—
Destroyers	9	9	15	31	6
Submarines	11	22	40	37	22

Figures of fleet readiness are given in Appendix C.

There were four main Navy Yards where new construction was undertaken, two large, Kure and Yokosuka, and two much smaller, Sasebo and Maizuru, whose combined production did not equal that of either of the large yards. A fifth yard, Ominato, was used only for repairs. The four Navy shipbuilding yards produced in the aggregate 41 per cent. of the total warship tonnage, the remainder coming from more than 20 commercial yards, of which the four

¹ The *Yamato* was not, however, included in the Combined Fleet on the outbreak of war.

largest, the Nagasaki Mitsubishi, Kobe Kawasaki, Osaka, and Aioi Harima accounted for more than half the total. The Navy Yard, Kure and the Nagasaki Mitsubishi commercial yard together delivered over 30 per cent. of the entire naval tonnage during the war. The great amount of repair work upset schedules and interfered with production: ships undergoing repairs took up time and space in the yards and used up materials. Repair work, which in 1942 amounted to 9 per cent. of the aggregate of construction and repair, rose thereafter to 12 per cent., and in 1945 to 34 per cent. of the total, as the Allies intensified their attacks on shipping by air, surface craft, mining and, in particular, submarines. Certain yards handled only repairs, other both repairs and new construction, the latter usually having priority. Bonuses were given for completion of new construction ahead of schedule, but there was no corresponding feature for repair work. The latter demanded more skilled technicians than new construction, and consequently repairs were hurriedly carried out, in order to get the ships out of the way. As a result, many ships were in poor condition when returned to sea. The rush for completion, and the high percentage of unskilled labour used affected new construction in a similar way.

61. JAPANESE SHIPBUILDING

Control of merchant shipbuilding was taken over by the Navy early in 1942, and from then until the end of the war the Navy controlled all merchant and naval shipbuilding, until the Army began the building of small vessels for transport purposes.

Constantly changing construction schedules made long-range shipbuilding programmes impossible after the beginning of the war. This was to a large extent due to the changing tactical situation and the resulting battle losses. Other factors were the need for diverting facilities for repair work on a much larger scale than the Japanese had anticipated, which caused confusion and disruption of production; and the lack of raw materials. This last factor became increasingly important as the war progressed.

There was a lack of organization and control throughout the war. Counter-measures to overcome bottlenecks were not taken until the bottlenecks had become practically uncontrollable, with the result that the countermeasures were usually too late. Co-ordination was never achieved between the Army and Navy. Indeed, some friction was apparent, and the creation of the Ministry of Munitions towards the end of 1943 did not appear to ease the situation. The Army undertook the building of small ships and submarines of its own, disregarding naval advice and technical experience. It is said that duplicate orders for the same articles would be placed at the same plants and at the same priority levels by different government organizations. Shipbuilding was further hampered by the difficulties which beset industry in general in Japan: mass production techniques were inadequate, production administration was poor, and shipbuilding facilities were inadequate. Delays were caused by inadequate stocks and flow of materials. In particular, shortage of steel limited the general level of production during the latter part of the war, and was primarily responsible for the sharp decline in the general level of naval ship construction from September 1944 onwards; labour was inefficient and in short supply, and there was a general shortage of transportation. To overcome the steel shortage recourse was had to wooden ship construction, which amounted however, only to 258,733 tons in 1944.

The first eight months of the war witnessed a sudden increase in the demand for naval ships which the shipbuilding yards were unable to supply. The unification of both naval and merchant shipbuilding under the Navy effected a great improvement in the situation, but with the drafting of men into the fighting services and the expansion of industry the quality of labour deteriorated.

The beginning of Allied counter-attacks in August 1942 rendered it necessary to undertake additional construction, chiefly that of escort craft and transports. The capacity of the yards was not equal to the demands; steel was short, and labour was too heavily diluted with drafted workers, Koreans, prisoners, and even schoolboys. Amongst secondary materials that were in short supply was oxygen, of which there was a lack throughout the Japanese Empire. This critically hampered steel cutting and steel repairing. Mass production of cutting tools had not yet overcome the shortage which existed here. In November 1943 the Ministry of Munitions was established, but, as a result apparently of its own defective organization it failed to co-ordinate efficiently the flow of materials to vital industries. The scarcity of food was already beginning to lower the efficiency of workers, especially those on night shifts. A year later a sharp decline in production of naval ships began. Steel deliveries dropped until, by the following April, steel was no longer available for any naval ship construction other than special attack weapons. The local transportation problem, which had been causing difficulty for some time, now became serious. Shortages became so pressing that total output was steadily forced down. Japan had gone to war with an industrial capacity unequal to a war of conquest. Her merchant fleet was barely sufficient for estimated minimum requirements, but her capacity to build was quickly exceeded by losses. The authorities had estimated in December 1941, that at the end of the third year of war the country would have 5¼ million tons of shipping left; actually, she had less than half that quantity of tonnage afloat. The attack on her merchant shipping exploited the basic vulnerability of an island which, with resources of the second order, was struggling to enlarge her capacity to wage war by drawing to herself the raw materials of a rich conquered area overseas. Imports of raw materials were short almost from the outset of the war. With the exhaustion of stocks output fell rapidly from its peak in 1944, until the economy of the country finally collapsed.

CHAPTER V

THE JAPANESE NAVY

62. MODERNIZATION OF THE FLEET, 1936

When in January 1936 Japan withdrew from the second London Naval Conference she at once set about modernizing her major warships and increasing the size of her fleet. Modernization of the battleships and cruisers was practically complete in 1940.¹ The building programme, intensified from 1936 onwards, nearly doubled the tonnage of the navy between 1922 and the outbreak of war in 1941. Output of new vessels continued at a high level until 1944, though on account of shortage of materials and other reasons the emphasis, apart from aircraft carriers, came to be placed more and more on light craft and finally on special attack (suicide) craft. The number and types of warships completed between 1931 and 1945 are given in Appendix C. It will be seen that there was an increase in the number of carriers from five in 1936 to ten in 1941 and in destroyers from 72 to 107. There was also a heavy battleship modernization programme. The building programme was framed to meet the requirements of operational policy in the event of war. This was to use the naval aircraft in carriers as striking forces with destroyers for screening. Battleships with their screening destroyers in support of the carriers would also provide floating platforms for anti-aircraft batteries. No cruisers other than light cruisers were laid down after 1935. The heavy cruisers carried float aircraft for tactical reconnaissance whilst for long-range search and reconnaissance the Japanese relied largely on aircraft working from the numerous potential seaplane bases in which the area of operations abounded.

Training methods and organization of the Japanese Navy were modelled on the British. Though the modern navy was a comparatively recent creation and had no history or tradition comparable to that of the army it possessed a high standard of *esprit de corps* and had been brought to a high pitch of efficiency. Its training had been hard and realistic, carried out largely in stormy northern waters. Ships' complements were larger than in western navies and life on board was spartan by western, though perhaps not unduly so by Japanese standards. Conscription was in force in peace-time.

63. ORGANIZATION OF JAPANESE COMBINED FLEET

At the outbreak of war the Japanese fleet consisted of:—

- 10 battleships (two 16-inch, eight 14-inch),
- 6 fleet carriers (includes two converted),
- 4 light fleet carriers (includes three converted),
- 18 heavy cruisers,
- 18 light cruisers,
- 104 destroyers (1st class),
- 9 destroyers (2nd class),
- 63 submarines,

in addition to vessels engaged in reconnaissance (11th Seaplane Carrier Squadron), escort and protection of shipping, minelaying and minesweepers, local defence and auxiliary services.

¹ The years referred to in this section are fiscal (April–March).

The Combined Fleet included all major units of the Navy except those in the Naval Forces in China. The two 16-inch battleships came directly under the Commander-in-Chief Combined Fleet.¹ All other ships were organized for administrative purposes in six fleets and an air fleet as follows:—

First Fleet (Battle Fleet)	8 battleships (14-inch). 6 cruisers. 2 cruisers (flotilla leaders). 28 destroyers.
Second Fleet (Scouting Force)	12 cruisers. 2 cruisers (flotilla leaders). 28 destroyers.
Third Fleet (Blockade and Transport Force)	3 cruisers. 1 cruiser (flotilla leader). 12 destroyers. 5 submarines. Minesweepers, minelayers, S/M chasers.
Fourth Fleet (Mandates Fleet)	3 light cruisers. 1 light cruiser (flotilla leader). 8 destroyers. 16 submarines.
Fifth Fleet (Northern Fleet)	3 cruisers. 2 destroyers.
Sixth Fleet (Submarine Fleet)	3 cruisers. 42 submarines.
First Air Fleet	6 fleet carriers. 4 light fleet carriers. 12 destroyers.

The remaining submarines were under Kure Naval Station. The forces for escort and protection of shipping included three divisions of destroyers, 21 of minesweepers, 18 of submarine chasers, 11 of gunboats and three of torpedo boats.²

From these administrative fleets the naval high command formed task forces for the specific purposes of the War Plan, as shown below. The two principal forces were the Striking (fast carrier) Force, which attacked Pearl Harbour, and the Southern Force which supported the conquest of the Philippines, Malaya and Netherlands East Indies.

TASK FORCES

Main Body (Commander-in-Chief Combined Fleet) (Admiral Isoroku Yamamoto)

- 1st B.S. (two 16-inch battleships).
- 2nd B.S. (four 14-inch battleships).
- 9th C.S. (two light cruisers).
- Eight destroyers.

¹ Based on *U.S. Pacific Fleet and Pacific Ocean Areas Weekly Intelligence*, Vol. I, No. 52, 9th July 1945. *Ship and Related Targets, Japanese Submarine Operations* (Index No. S-17 (B.I.O.S./JAP/PR/1280) states that the 4th and 5th Submarine Flotillas came also directly under the Commander-in-Chief Combined Fleet. Morison, *History of U.S. Naval Operations in World War II*, Vol. III, places the 16-inch battleships in the First Fleet.

² *The Campaigns of the Pacific War*, United States Strategic Bombing Survey (Pacific), Naval Analysis Division, Appendix 112. Each division probably consisted of two or at most four vessels. It has been estimated on good authority that the number of escort vessels available was only one-tenth or less of the total required for adequate protection of shipping.

Striking Force (Commander-in-Chief First Air Fleet) (Vice Admiral Chuichi Nagumo)

- 3rd B.S. 1st Div. (two 14-inch battleships).
- 1st Carrier Squadron (two fleet carriers).
- 2nd Carrier Squadron (two fleet carriers).
- 5th Carrier Squadron (two fleet carriers).
- 8th C.S. (two 8-inch cruisers).
- 1st D.F. (one light cruiser, 16 destroyers).

Southern Force (Commander-in-Chief Second Fleet) (Vice Admiral Nobutake Kondo)

- 3rd B.S. 2nd Div. (two 14-inch battleships).
- 4th Carrier Squadron 1st Div. (two light fleet carriers).
- 4th C.S. (four 8-inch cruisers).
- 5th C.S. (two 8-inch cruisers).
- 7th C.S. (four 8-inch cruisers).
- 16th C.S. (one 8-inch, three light cruisers).
- 2nd D.F. (one light cruiser, 12 destroyers).
- 3rd D.F. (one light cruiser, 16 destroyers).
- 4th D.F. (one light cruiser, 12 destroyers).
- 5th D.F. (one light cruiser, 12 destroyers).
- About 16 submarines.

South Seas Force (Commander-in-Chief Fourth Fleet) (Vice-Admiral Shigeyoshi Inoue)

- 1 light cruiser.
- 6th C.S. (four 8-inch cruisers).
- 18th C.S. (two light cruisers).
- 6th D.F. (one light cruiser, 12 destroyers).
- About 16 submarines.

Northern Force (Commander-in-Chief Fifth Fleet) (Vice-Admiral Bashiro Hosogaya)

- 21st C.S. (one 8-inch, two light cruisers).
- 2 destroyers.

Advance Expeditionary Fleet (Commander-in-Chief Sixth Fleet) (Vice-Admiral Mitsumi Shimizu)

- 3 light cruisers.
- About 26 submarines.

Attached Forces (Training)

- 4th Carrier Squadron, 2nd Division (two light fleet carriers).
- Miscellaneous vessels.

A number of the destroyer divisions were interchanged between flotillas. Thus although the 1st Destroyer Flotilla is listed in the Striking Force, probably four ships of that flotilla were in the group that attacked Pearl Harbour, the places of the detached divisions being taken by divisions from other flotillas.

Japanese surface warships did not differ radically in design from those of British and American design.¹ Whilst however the British Commonwealth, France and the U.S.A. were bound by the Treaty for the Limitation of Naval Armament of March 1936, not to exceed a limit of 35,000 tons for each battleship and 16 inches for guns, the two newest Japanese battleships, *Musashi*

¹ Japanese submarines are dealt with in Section 65.

and *Yamato*, which joined the Fleet soon after the outbreak of war, displaced 72,800 tons at full load and were armed with nine 18·1-inch guns, thus far exceeding in power any others afloat. Building of aircraft carriers began in 1934. Before December 1941 two fleet carriers, the *Kaga* and *Akagi*, were converted from a battleship and battle-cruiser design respectively, and three light carriers were also converted. There were subsequent conversions, from merchant ship hulls; and during the war two battleships, the *Hyuga* and *Ise*, were converted to 'battleship-carriers' by the removal of four of their twelve 14·2-inch guns and the fitting of flight decks aft. In their cruisers, the Japanese tended to put heavier armaments on smaller hulls than the Western Navies, apparently at the expense of protection, particularly above the upper deck: it should not be inferred, however, that their ships were unable to stand up to punishment. They could and did, a result probably attained through considerable subdivision of the hulls.

64. OPERATIONAL EMPLOYMENT OF JAPANESE NAVAL FORCES

Though the Japanese Navy was a highly tempered weapon it was neither served nor used as it deserved. The industrial echelon which supported it was inadequate, and the direction at the top ineffective. Some of the deficiencies and shortcomings of industry have already been noticed,¹ but even more serious in the long run were the mistakes of policy and strategy: mistakes curiously out of keeping with the masterly conception and planning of the great initial operation which in less than six months made Japan temporarily master of the Far East.

Japanese naval strategy and tactics expressed the national characteristics and were remarkable in two respects: the operational employment of their submarines and the exploitation of suicide weapons. In other ways their methods departed little from orthodox. They liked to subdivide the forces carrying out operations, however small, and co-ordinate their movements. The difficulty of co-ordinating the intricate movements of four different forces was largely responsible for the Japanese failure to break up the first American landing at Leyte Gulf in the Philippines in October 1944 when the invasion shipping lay at their mercy for several hours. Their great fondness for traps and surprise (the latter admittedly one of the principles of war) was typical of the 'wily savage' of which so much still remained in this nation whose western veneer was barely two generations old. The attraction which night actions had for the Japanese served them well in the early part of the war but betrayed them later, when the Americans had developed radar to such a pitch that their night fire control was almost equally effective as their day.

The manner in which both Japanese and Americans came to recognize the dominance of the air in operations over the wide spaces of the Pacific has already been noticed. But in the building of aircraft carriers and training of pilots and technicians the shallow Japanese potential was quite unable to compete with that of the United States.

Tactical minelaying was carried out, and at the beginning of the war strategic mining of certain Philippine and Malayan waters was ordered. Minefields were laid off southern Kyushu towards the end of the war, as part of the plan for defence.

¹ In Chapter IV.

65. JAPANESE SUBMARINES

The low standard of Japanese technological research bore hardly on their submarine service, in which efficient radar, sonar and communication equipment were necessities in order to enable operations to be conducted with any hope of success against the United States Navy in which these inventions were so highly developed. The continuous advance in American methods of detection and annihilation was not only a deterrent to the audacity of individual Japanese submarine officers but also influenced operational planning. During an investigation into Japanese submarine operations by the U.S. Naval Technical Mission

'the conviction grew, through conversations, interrogations and study, that the percentage of overly discreet (submarine commanders) was large. It was frankly impossible to believe that submarines could spend weeks on the U.S. west coast "without contacts," or spend more than 40 days running among the Solomons during the Guadalcanal campaign "without seeing any targets." Even the Japanese commanding officers could not disguise their embarrassment when recounting these tales. Further enlightenment is found in the extremely large number of times the target was "too far away to attack."'¹

Submarines were attached to various fleets and were operated by the Commander-in-Chief of the Fleet, who had on his staff a submarine Liaison Officer as adviser on submarine operations.

At the beginning of the war Japanese submarines were of two main classes, I and R, roughly over and under 1,000 tons respectively. The I class included fleet submarines and cruiser submarines, the differences being mainly in speed and radius of action. The faster cruiser submarines could be used for fleet operations. The smaller R class boats were used on patrol as well as for defensive purposes. The Japanese produced about 13 classes of submarines during the war, with many types within classes. Prior to the war the importance given to midget submarines caused three ships to be built to carry them to the objective and charge their batteries, for the early midgets had no independent source of power. The ships were never used for the purpose and were later converted to aircraft carriers,² some submarines being fitted to carry the midgets instead. Attacks on allied ports were made as far afield as Diego Suarez and Sydney by such midgets, and by 'Kaiten' or suicide torpedoes with a special compartment for a man, likewise carried on board orthodox submarines.

Despite the example of German near-success in the attack on British trade in the First World War the Japanese held the principal function of the ocean-going submarine to be support of fleet operations, particularly the attack of aircraft carriers and battleships, and the type was consequently characterized by high surface speed and light build. The principal missions with the fleet during operations consisted in screening ahead of the fleet, as in the attack on Pearl Harbour in December 1941; reconnaissance of harbours or bases from which hostile vessels and aircraft could issue to take part in an operation in progress, as at Midway in June 1942 where *I-168* kept surveillance over the island; and ambushing, which consisted of moving submarines beforehand to the expected path of an enemy force, as in the Marianas operations in June and July 1944. Aircraft carried by submarines were used for reconnaissance up to considerable distances, and late in the war a few submarines of some

¹ *Ship and Related Targets, Japanese Submarine Operations*, p. 9.

² *Chitose, Chiyoda and Nisshin*.

5,500 tons were built, to carry three bombing aircraft. The loss of the initiative early in the war and the many sinkings, severely handicapped the Japanese Submarine Force. Diminishing numbers led to the boats being rushed from anticipated to actual points of attack, usually too late and exposed to destruction through travelling on the surface. There was a resultant demoralization.

Soon after the outbreak of war some fast submarines were transferred to the Indian Ocean to attack merchant shipping, particularly on the Cape route, at the instance, it is said, of the Germans who throughout the war endeavoured to persuade the Japanese to abandon the policy of attacking warships in favour of attack on trade. Japanese submarines in the Indian Ocean were not reinforced after the early part of 1944 and the force gradually dwindled away, but German submarines operated from Penang, and after September, 1944, from Batavia, until the surrender of Germany.

In the Pacific, too, some attempts were made to disrupt the long American lines of communication, but they were made in insufficient strength and were not persisted in. The number of available submarines began early to dwindle. This diminution was due to several causes. New construction did not keep pace with sinkings, owing both to shortage of material and vacillating policies regarding both types and sizes. This also applied to equipment. For instance, after the Philippine operations practically all submarines were rushed to Japan for the addition of Kaiten ('human torpedo') launching gear, but when many of them were partially converted they were hurriedly despatched to take part in the defence of Okinawa. In the later stages of the war Japanese submarines were nearly driven out of the Pacific by the Allied counter-measures, thus rendering possible a general relaxation of Allied anti-submarine defence measures and contributing to the success of the method evolved by the Americans of operating their task forces, particularly the fast carrier groups, with a Fleet Train. This allowed forward bases to be kept supplied and ships to be replenished with fuel, ammunition, aircraft, stores and provisions at sea. Thus it was possible for squadrons to operate for many weeks on end far in advance of forward anchorages and bases. An efficient enemy submarine force could have seriously threatened the logistic support groups operated by the Americans, at least in the later stages of the war.

The number of submarines available for offensive operations was considerably reduced by the transfer of a proportion to the work of transport and supply for beleaguered bases, a duty which the Army apparently forced on the Navy against its will. This, no doubt, was responsible for the trend of Japanese submarine development, which resulted in a compromise of the transport and patrol type submarine, a few of which were completed before the end of the war. It is not known how many vessels were employed on transport duty, but at least 25 of the 129 Japanese submarines sunk during the war were lost whilst so engaged. During the Marianas operations, regarded by the Japanese as crucial, no less than one-third of the total submarine force was engaged in transport and supply to bases not directly involved in the operation.

Whilst some German submarines were continually employed on blockade running between Germany and Japan only two or three Japanese were thus employed. Germany seems to have benefited largely from these operations, Japan less so. Towards the end of the war the Army built a few submarines, intending to operate them themselves on transport and supply duty.

Attacks on allied ports were made as far afield as Diego Suarez and Sydney by midget submarines and suicide torpedoes carried on board orthodox submarines.

66. JAPANESE NAVAL AIR FORCE

At the beginning of the war the established strength of the Japanese Naval Air Force is believed to have been 1,737 aircraft, of which 660 were fighters, 330 shipboard torpedo aircraft and bombers, and 240 land torpedo aircraft and bombers. Considerable use was made of float reconnaissance aircraft and flying boats, which together numbered 525. There were two seaplane squadrons, carrying in all some 70 seaplanes (or an additional 50 per cent. with wings folded), and some 80 seaplanes are reported to have been attached directly to the Combined Fleet.

The Japanese early adopted the theory that land-based air power should be an integral part of the naval establishment, and close co-operation between land and carrier-based aircraft played a large part in their early successes. The bulk of the combat strength of the shore-based naval air forces was contained in the Eleventh Air Fleet. This comprised three flotillas. Of these the 21st and 23rd, with a total of 270 immediate equipment aircraft and about 80 in reserve, were based in Formosa with a few aircraft detached to Palau, the Marshall Islands and Indo-China. The latter was the base of the 22nd Flotilla (105 I.E. aircraft, 30 in reserve). At the beginning of the war the Southern Force (*see* Section 94) was given operational control of the Eleventh Air Fleet.

The carrier forces comprised the First Air Fleet which included the 1st, 2nd and 5th Carrier Squadrons (two fleet carriers each) and the 4th Carrier Squadron (four light fleet carriers). In addition the 11th Seaplane Carrier Squadron (seaplane carriers and aircraft transport ships) worked with the carrier forces. The normal complements of the fleet carriers were about 63 aircraft (72 in one case), of which 27 were fighters and the remainder torpedo aircraft and bombers. The light fleet carriers' aircraft complements were about 21 upwards, half or more of which were fighters.

The carrier pilots were the cream of the Japanese Naval Air Force. Aggressive and resourceful, they flew their aircraft with skill and daring. Their peace-time training was thorough and compared well with that given to Allied pilots. Many of them had gained experience in operations in China.

The air component of the Japanese Fleet established itself at the very outset of the war as the dominant weapon. From Pearl Harbour the Japanese carriers proceeded to the Indian Ocean where they added to their successes by sinking the cruisers *Dorsetshire* and *Cornwall* and the carrier *Hermes*, whilst the light carriers supported the occupation of the Philippines where Japanese Navy aircraft, land based in Formosa, aided by Army aircraft, had destroyed the American air forces in the first few hours of war. In May 1942 the first naval action in history in which no ships on either side exchanged a shot, was fought in the air above the Coral Sea, and for the first time the Japanese carrier operations received a severe check, with consequent retirement of the expedition of which they were the spearhead and the failure of the mission which brought about the encounter.

A month later, disaster overtook the Japanese Naval Air Force. At the Battle of Midway on 4th June American carrier-based dive bombers in the space of a few minutes inflicted on the First Air Fleet a defeat so crushing that the Japanese Naval Air Force never recovered. After this battle there was a noticeable deterioration in the quality of Japanese naval air fighting. Pilots had been used in the early months of the war without regard to the need for expending trained flyers sparingly and there was no real reserve. The losses in the Battle of

Midway, followed as they were by continuous losses of pilots and technicians in the fighting in New Guinea and the Solomon Islands practically destroyed the Japanese Naval Air Force by the end of 1943. The training organization was unable to make good losses. While thousands of aircraft could be built (it is reported that 14,161 were produced for the Navy in the peak year 1944), only hundreds could be maintained, and only scores could be manned by efficient pilots.

67. SUICIDE TACTICS AND WEAPONS

The Japanese were predisposed to suicide tactics by character and religion. Attacks of this nature by Special Attack vessels such as 'human' torpedoes, crash boats, and by 'limpeteers' were a feature of their operations throughout the war, though the Japanese themselves considered that insufficient attention was given to suicide tactics of all types and that the preparations made to exploit the national docility and readiness for self-immolation were inadequate and were made too late. The suicide attack is as old as history. It belongs, properly, to uncivilized races, and had never before been deliberately adopted as a policy by a nation aspiring to Western civilization.

The later stages of the war saw the introduction of suicide attacks by the Japanese Air Forces. Known as 'Kamikaze,' this type of air attack in which the pilot directed his aircraft, with bomb still in place, to hit the enemy ship, apparently made a spontaneous appearance amongst pilots of the Japanese Navy Air Force in the late summer of 1944. It was later officially recognized and training undertaken; and was adopted as the operational method for the air forces in the final defence of Kyushu. Its first concerted use was at the Battle for Leyte Gulf in October 1944. Since it entailed destruction of both aircraft and pilot, it was, of course, a wasting asset, and as such a policy of despair, adopted at a time when the numbers and state of training of Japanese pilots were inadequate for orthodox methods of fighting. But from the Japanese point of view it had the advantage of enabling half trained pilots and almost any type of aircraft that could get into the air, to be used. Thus a fighter or training aircraft with a bomb lashed to it could be operated instead of an orthodox bomber. The disadvantages were that the aircraft was comparatively vulnerable during its dive, while its bomb, having little penetration, was ineffective against armoured ships with efficient damage control. Under certain circumstances however, such as the Ryukus operation, where the American and British Pacific Fleets had to remain immobile for weeks in face of very heavy air attacks, it could cause much damage. Although sinkings by suicide aircraft in that operation were confined to light craft and auxiliaries the vessels hit and put out of action included several American aircraft carriers. On the other hand, the armoured decks of the British carriers provided adequate protection. Every carrier was hit at least once but all remained in operation.

68. RESEARCH AND INVENTIONS

The Japanese were skilled copyists and clever adapters, though less successful as inventors. Research work in Japan was, in general, backward in comparison with the United Nations, and it was a source of weakness that the Army and Navy each carried out their own research independent of one another and of civilian research workers. This handicapped their Navy particularly badly in the field of electronics in which perhaps the greatest technological advances of the war were made. In two most important branches, however, Japanese

design and research achieved remarkable success and enabled the Navy to begin the war with weapons superior to those of the United Nations,¹ namely torpedoes and carrier-borne aircraft, both of which furnished unpleasant surprises when first encountered.

When war broke out, the ships of the British and American navies alone were fitted with a search radar specifically designed for shipboard use. Japanese warships were not provided with radar until after the Battle of Midway in June 1942. Even as late as October 1944, during the night Battle for Surigao Strait Japanese radar was so ineffective that the battleships *Fuso* and *Yamashiro* were unable to return the radar controlled fire of the American battleships, and were overwhelmed without aiming a shot at them. Shore radar stations were first set up in Japan about June 1942, nearly two years after the device had played an essential part in winning the Battle of Britain.

The Americans began the war with naval fighter aircraft (F4F-4) markedly inferior to the Japanese Zero in speed manoeuvrability and climb, but superior in armament and in the possession of armour- and leak-proof tanks. The American naval torpedo aircraft was too slow and the long-range reconnaissance aircraft (the Catalina) was incapable of carrying out the important function of shadowing in face of enemy fighter opposition. Superior military potential enable the Americans to remedy deficiencies such as these, more quickly than the Japanese.

The great strides made during the war by ourselves and the United States in electronic anti-submarine detection apparatus were never matched by the Japanese and consequently the latter found themselves at a serious disadvantage in a war in which Allied submarines played such an important part in the destruction of their merchant marine.

Amphibious operations, which played a large part in the war in the Pacific, were greatly aided by the introduction by the Americans of ships' rockets for the support of landings. These enabled heavy fire power to be concentrated in light craft. Appropriate types of rockets were developed for use against submarines, and for aircraft.

69. CO-OPERATION WITH THE ARMY

Throughout the war, numerous efforts were made to improve co-operation between the Japanese Army and Navy. It became increasingly evident that many operational difficulties could be traced to lack of standardization of equipment. For example, major differences in radio equipment design resulted in poor intercommunication between Army and Naval aircraft; and due to variation in design of IFF equipment accurate identification of both Army and Naval aircraft was often impossible. Probably nowhere was failure more evident than in the air, and at one time an attempt was made to design and use common aircraft. It failed, due to rivalry between the air forces.

When war broke out, there was in existence a joint Army and Navy Committee, and although this encouraged some co-operation and exchange of technical knowledge, no striking results occurred. In 1942 the Army Navy Air Committee was formed to expedite solution of the increasing wartime problems. Efforts were generally limited to research. Results were negligible. The necessity for a certain degree of uniformity between the equipment used by the

¹ A term employed, at President Roosevelt's suggestion, in the Atlantic Charter, August 1941.

Army and Navy led in 1943 to the replacing of the Air Committee by the Army-Navy Technical Committee established by the chiefs of the Army and Naval Headquarters. Proposals were studied for joint research, design, and production of weapons and equipment. There were a few specific joint achievements in the field of research, but due to persistent disagreement on ideas, full co-operation was never attained. Some high technical officials believed that unification in the early stages of research would by eliminating rivalry adversely affect achievements.

In any case, co-operation in design began too late to render joint use of weapons and equipment practicable. Standardization would have entailed comprehensive re-equipment of units. To take one example only: variations in existing designs precluded joint use by the Army and Naval Air Forces of most aerial weapons (guns, cannon, rocket-launchers). Any attempt at large-scale re-equipment of units with standardized weapons would have entailed disadvantages far outweighing the potential gains of joint production. It would have called for major modifications of industrial installations, re-tooling of factories, replacement of existing stocks thereby further complicating the already complex supply problem; whilst personnel would have required re-training in operation and maintenance, and existing tactics would have needed to be revised.

CHAPTER VI

JAPANESE WAR PLANS

(See Appendix E, F and Plan 1)

70. JAPANESE NAVAL PLANNING ORGANIZATION

During the war the Japanese nation was completely dominated by the military, consisting of two factions independent of the 'Government,' namely, the Army and the Navy. The idea that the Emperor was the supreme head of the state, was universally accepted; but it is significant to note that the Army and Navy named their own Cabinet Ministers and that right of access to the throne was enjoyed by the titular heads of the fighting services, the Chiefs of Staff of the Army and Navy and the Ministers for War and the Navy. Both the latter were invariably drawn from the active lists of the Army and Navy. Consequently, it is probably safe to assume that an Imperial Edict such as the Declaration of War on the United States and Great Britain which was issued over the Imperial name and seal on 7th December 1941, was made at the behest of the military chiefs. No other governmental body had any control over the war powers of the Army and Navy; and what democratic nations are accustomed to regard as the government, was so completely overpowered by the Ministers of War and Navy, that it is said that the resignation of either minister entailed the formation of a new Cabinet and, further, that failure of either the Army or Navy to appoint a minister prevented the formation of a new government. These two factions of the all-powerful military exercised their functions only through mutual agreements. Unless an agreement was reached between them, nothing could be accomplished.

The Emperor was Commander-in-Chief of the Army and Navy though the extent of his authority is uncertain. Imperial Headquarters, created only in time of war for the purpose of assuming supreme military command, was formed in November 1937, on the outbreak of war with China. Being the supreme military command it had great influence on national war policies, although its primary concern was operational planning. Here again, if a difference of opinion arose between the Chief of the Army General Staff and the Chief of the Naval Staff, and was not resolved, stalemate and inaction resulted.

It seems that from about the time of the Manchurian incident, the Navy had little voice in the direction of national policies. The influence of the Army was always the stronger and the eyes of its chiefs were turned towards the continent of Asia, Manchuria and China, rather than the Pacific Ocean. The preponderating influence of the Army is shown by the fact that in joint Army and Navy operations the plans were drawn up by the Army and presented to the Navy for its approval. 'Frequently, if the operation was one which a sailor could not understand, the approval or consent would be given without any study or discussion.'¹ It was, however, in the field of military equipment that the influence of the Army was chiefly felt. For example, the Army would disturb without reference the allocations of shipping, and in the later stages of the war built and operated its own transport fleet, both submarine and surface.

¹ Fleet Admiral O. Nagano (Chief of Naval General Staff 1941-1944, Supreme Naval Adviser to the Emperor 1944), statement in interrogation.

The Cabinet was primarily concerned with the economic and political administration of the nation and the provision of men and materiel for the conduct of the war. The Supreme War Council was the chief advisory body on matters of national war policy, but actually Imperial Headquarters had more to say on the subject of policy than this unwieldy council composed of the Ministers for War and the Navy, the Chiefs of Staff of the Army and Navy, the Board of Field Marshals and Admirals, and other high officers on the active and retired lists. In consequence of reverses its functions were later taken over in practice by the Supreme Council for the Direction of the War, established on 5th August 1944. This was a small body composed of six regular members: the Prime Minister, Ministers for War and the Navy, Chiefs of the Army General Staff and Naval General Staff, and the Foreign Minister. Any other Cabinet Minister could be co-opted when necessary. It was concerned, not with operational plans, but with fundamental policies for the conduct of the war, and with obtaining national unity in the prosecution of the war.

71. BASIC PLAN

The object of the war was to make Japan self-sufficient, by obtaining permanent possession of the sources of raw materials essential for the maintenance of Japanese economy both in peace and war; in particular, the riches of the 'Southern Resources Area'—Malaya, Borneo, and the Netherlands East Indies including Timor. This was to be achieved by a rapid attack on the interests of the three principal powers in the Far East; Great Britain, the United States, and the Netherlands East Indies, taking advantage of surprise to enable all resistance to be overpowered. An iron ring of outer defence would then be formed, against which the spiritually inferior, peace-loving opponents could beat themselves into war weariness while Japan consolidated her gains. In order to isolate the Far East it was necessary to destroy the power of the United States to operate in the Western Pacific and of Great Britain to operate in Far Eastern waters, cutting their respective sea communications with those areas as well as the land communications from India and the Indian Ocean to China (the Burma Road). The operations for the attainment of this object fell into three phases. The first was to consist of the surprise attack and the operations necessary to obtain mastery over the Far East area: the second was to be a period of consolidation and strengthening the defensive perimeter; while the third would be a defensive-offensive phase during which any forces threatening the perimeter or vital areas within it would be sought out and destroyed. The plan added: 'Concurrently with the intercept operations (third phase) the activation of plans to destroy the United States' will to fight.'

The first requirement was to destroy or immobilize the only two enemy forces in the theatre which in the absence of the British main fleet were immediately capable of bringing to bear opposition sufficient to defeat the plan. These were the United States Pacific Fleet based on Hawaii, and the United States Army Air Force in the Philippine Islands. Concurrently, operations were to begin for the capture of strategic areas and positions for the establishment of a perimeter for the defence of the Southern Resources Area and the Japanese Home Islands. The area to be seized was defined by a line joining the Kurile Islands, Marshall Islands including Wake, the Bismarck Archipelago, Timor, Java, Sumatra, Malaya and Burma. This immense operation was carried out rapidly and smoothly, even the unexpectedly stiff American resistance in the Philippines, which held out until 6th May, causing little or no alteration in the schedule. Within a few hours of the raid on Pearl Harbour,

which immobilized the American battle fleet, the Japanese invaded Malaya, Siam which immediately capitulated, and Hong Kong; launched the first air raids on Singapore; and made the air raids on the United States airfields on Luzon, which destroyed the American air forces in the Philippines. The invasion of the Philippines followed next day; and 48 hours after the outbreak of war, by sinking the *Prince of Wales* and *Repulse* the Japanese added command of the sea to their local command of the air. There was one omission, however, the supreme importance of which was not recognized at the time, namely the failure to destroy the United States aircraft carriers, which were at sea when the attack on the naval base at Pearl Harbour took place, and so escaped the fate which befell the battle fleet. It was these carriers and their air groups, which six months later, at the Coral Sea and Midway hurled back the wave of conquest. From then on Japan never regained the strategical initiative.

There was no hint of this, however, during the next four months as the Japanese advanced rapidly southward in a sector extending from the Andamans to the Gilberts. Landings on the west coast of Borneo enabled airfields to be developed in support of the operations against Malaya. Simultaneously, from their secret strongholds in the Mandates the Japanese effected the capture of Wake Island, Makin and Tarawa in the Gilberts, and Nauru; whilst undefended Guam fell an easy victim. By the end of the first month of war Hong Kong had fallen, Singapore was invested, resistance in the Philippines was confined to the 'ultimate defence area,' and all the outlying islands west of the 180th meridian and north of the equator were under Japanese control. The invasion of Dutch Borneo followed within a week, though Allied opposition cost the enemy several ships before the important centres, Tarakan and Balikpapan were captured. Another great oil centre, Palembang in southern Sumatra, was captured on 15th February, the day on which Singapore fell. Within a fortnight, on the 27th February, the Allied naval forces in the Netherlands East Indies area were all but annihilated by an overwhelming Japanese fleet at the Battle of the Java Sea, and the fate of Java was sealed. Within the week the Japanese Navy and its air component completed the destruction of the British, Dutch and American fleets in South-East Asia, the few survivors of which escaped to Australia. Australia itself became threatened when Papua (the eastern half of New Guinea) and the off-lying islands were attacked; and the capture of Lae, Rabaul and Kavieng gave the enemy potential naval and air bases which they quickly developed. Burma was attacked from Siam: on 7th March Rangoon fell, and the way to Lashio, terminus of the Burma Road to China, was clear before the end of the following month. On 10th May the last British troops evacuated Burma, retiring through Assam into India. Even the Far East was not large enough to contain the Japanese, and on 23rd March they extended their control to the eastern part of the Bay of Bengal by occupying Port Blair in the Andaman Islands.

In little more than four months the Japanese completed the first phase of the war plan, and practically the entire Greater East Asia Co-prosperity Sphere was in their possession. (See Plan I.)

72. SUPPORTING PLANS

The war plan provided for various supporting operations. Every opportunity was to be taken to make raids on Allied advanced bases to reduce Allied air and naval strength and prevent the use of certain positions as operational bases. The first two air raids of this nature were made by carrier-borne aircraft

on Port Darwin on 19th February 1942 and Ceylon between 5th and 9th April of that year. It was intended to raid Hawaii by seaplanes refuelling from submarines at French Frigate Shoal in the central part of the Hawaiian group, and if possible by land-based aircraft operating from Midway after its capture which was planned for early June 1942. Considerable success attended the early carrier-based air raids. Immense damage was done at Darwin and the Government of the Northern Territory had to remove 1,000 miles south, to Alice Springs. The attack on Ceylon and the Bay of Bengal caused the loss of a British carrier and the only two 8-inch cruisers of the Eastern Fleet and drove the bulk of that Fleet from its sole remaining bases in eastern waters, across the Indian Ocean to Kilindini, where it stayed until the threat to India and Ceylon receded.

The turn of affairs came with the Battle of Midway in June 1942. The heavy losses of Japanese aircraft carriers and machines and pilots at that battle put an end to offensive carrier based air operation against Allied bases and communications which were a feature of the supporting war plans, and threw the Naval air component on the defensive. With their carrier fleet reduced to comparative impotence the Japanese Naval Air Force operated from land bases pending reorganization and the formation of a new air fleet, but with little success. Allied opposition hardened rapidly, the Japanese Air Forces dwindled in numbers and quality in face of continuous attack specifically aimed at their destruction, until finally, in the early spring of 1945 a decision of despair was taken and both Army and Naval Air Forces were organized to implement a standard policy of suicide attacks.

Complementary to air raids on Allied advanced bases were operations by midget submarines and 'human torpedoes' (*Kaiten*) carried to the scene of action on board ocean going submarines. After the initial raid on Pearl Harbour on 7th December 1941 and the raids on Sydney and Diego Suarez on 1st June in the following year, however, little effective use was made of these weapons until the later stages of the war. Following a successful raid on Ulithi in November 1944 widely separated attacks were made, and achieved some small successes. The impossibility of making good the immense damage caused to their fleet in the defence of the Philippines in October 1944 drove the Japanese Navy in the last months of the war to rely almost exclusively on 'special attack' weapons of this description.

It is said that the Japanese had made plans to employ submarines to attack shipping in the Pacific and Indian Oceans and that much was expected from them, but little came of these operations for reasons already noticed.¹ Two raiders operated without great success in the Indian Ocean from the outbreak of war until November 1942 when one of them was sunk;² but actually the Japanese made little use of surface raiders, to the employment of which it seems that insufficient attention had been paid before the war. A raid in the Indian Ocean by two cruiser squadrons was ordered early in March 1944, and the British Eastern Fleet made a sweep, without, however, sighting the enemy.

73. PROTECTION OF JAPANESE LINES OF COMMUNICATION

Japanese strategy and tactics alike laid greater stress on offence than defence, and in the war plans inadequate attention was paid to the defence of their lines of communication. Japanese shipping losses during the first twelve months

¹ See Section 64.

² They captured two ships and sank three during nearly twelve months of operating.

of war were not unduly heavy, and the question of trade protection did not obtrude itself. The magnitude of their losses from the beginning of 1943 onwards found Japan consequently unprepared, and in the summer of that year belated plans for the protection of shipping were made and put into effect, culminating in the establishment in November of the Grand Escort Fleet. In the summer of 1943 convoy was introduced and a system of shipping control established, surface escort units being organized and additional escort vessels provided. A refuge policy for shipping was also established. Fast light naval craft and submarines were employed for transport and supply in advanced areas. At the same time operations against enemy submarines were intensified, some improvement being effected in anti-submarine weapons and the training of personnel in anti-submarine warfare.

At the beginning of the war Japanese measures for the protection of shipping were not only inadequate but ill-conceived. The vessels detailed for the duty were distributed amongst the nine Naval and Guard Districts and the various fleets, each command being responsible for protection within its own area. There was no single responsible authority and no escort organization, whilst co-ordination of the work of adjacent commands was loose. Counter-measures were far behind those of the Allies in development, and continued to fall behind as the Allies intensified their operations, even after mounting losses at length caused attention to be given to the subject. It was then too late to save the remainder of the Japanese merchant fleet. Shipping on the route to the Southern Areas dwindled to a tenuous trickle and finally this line of communications, vital to the maintenance of Japanese war industries, had to be abandoned in the spring of 1945; and even in the Inner Zone it eventually became impossible to maintain the flow of trade. Exhausted by the pressure of sea power, Japan was unable to withstand the final assault delivered from the air.

74. PLAN FOR FURTHER EXPANSION

None of these difficulties showed themselves, however, during the first four months of the war. Influenced by the unexpected ease with which the operations of Phase I were carried out, Phase 2 was postponed and plans were made for further expansion instead of consolidation of the gains already made. These plans, which were intended to extend Japanese control of the Pacific, provided for expansion of the perimeter southward and eastward. Port Moresby in southern New Guinea was to be captured in order to strengthen the defences of New Guinea and the Bismarcks, and Midway in order to strengthen the defences of the Central Pacific and to force a decisive engagement with the United States Fleet. In the far north, the Western Aleutians were to be invaded in order to reinforce the defences of the Northern area; whilst the seizure of New Caledonia, Fiji, and Samoa was to be effected to enable the lines of communication between the United States and Australia to be cut. This latter operation was contingent on the successful completion of the others and was to take place after the capture of Midway.

The extended plan was too ambitious. The strategic sphere was already larger than Japanese war potential could support: military strength, shipping, and the national economy were all inadequate for the task imposed on them. Whilst the defences of the areas already seized were left incomplete the Japanese put in hand three fresh expeditions, for the capture of Port Moresby, Midway Island and the western Aleutians. The calls on their resources were more than they could afford. The plans went astray; crews, ships, and aircraft were lost and

the nation's residual strength was insufficient to make good the losses. In a predominantly naval and air war, all subsequent Japanese naval operations suffered from the handicap of the losses incurred in attempting to expand the perimeter in May and June 1942.

75. PERIOD OF CONSOLIDATION

When the Japanese returned to the original plan of consolidation after the failures of the expeditions to Port Moresby and Midway it was with greatly reduced strength. This Phase 2, as originally outlined, had entailed the formation of defensive points at Manila, Singapore, and Surabaya (Java), which were to be main advanced bases; and Hong Kong, Davao, (south Philippines), Batavia, Tarakan and Balikpapan in eastern Borneo, Manado (north Celebes), Makasar (south Celebes), Ambon off south-west Ceram Island in the Moluccas, Penang and Rabaul in the Bismark Archipelago. In the Plan of Operations (Appendix E) no mention was made of the Mandates, but these were included in the perimeter which now extended from the western Aleutians, through Ogasawara Gunto (the Bonin Islands), the ex-American Wake I. (midway between Hawaii and the Marianas), the Marshalls, the ex-British Gilbert Islands, Bismarcks and New Guinea, on and within which line defences in general were to be strengthened. The areas to be held at all costs were the Southern Resources Area (the Netherlands East Indies, Borneo and Malaya), and the area to the westward of an inner perimeter passing through the Kuriles, Bonins, Marianas and Carolines. Consolidation of the conquests was scheduled to be completed by areas, the Northern Area by June 1942, the Solomons and eastern New Guinea by November, the Southern Areas by January 1943, whilst by March 1944, less than two and a half years after the outbreak of war, the general defence of all areas was to be secured.

Defence was to be based on air power, between which and sea power there was to be close co-operation. It was to be an active defence, and three main operational tasks were called for. Any offensive operations by the United States Fleet were to be forestalled by invasion or destruction of strategically important positions, and the American Fleet was to be destroyed, either at its advanced bases or after 'enticing' it into action under favourable conditions; operations against lines of communications were to be undertaken, to prevent reinforcement in men or supplies; and the protection of the Japanese lines of communication was to be increased.

76. THE 'Z' OPERATION PLAN

The task of ensuring the defence of the occupied area proved to be beyond the power of the Japanese. In February 1943 they were forced to give ground in the Solomon Islands, where Guadalcanal, valuable for its airfields (Henderson Field), was evacuated after six months resistance, and in the following month the progress of the Allies caused the Solomons and eastern New Guinea to be removed from the vital area and it was decided that only delaying operations would be undertaken there. In the new plan drawn up about May 1943, termed the 'Z' Plan, the defensive perimeter was established on a line joining the Aleutians (where footholds had been gained in June of the previous year during the only one of the three operations for expanding the perimeter which ended in other than complete failure), Wake, the Marshall and Gilbert Islands, Nauru and Ocean Islands to the westward of the Gilberts, and the Bismarck Archipelago.

The principal positions on this perimeter were to be reinforced and local commanders made responsible for meeting attacks on the line. Local naval forces consisted of cruisers and destroyers based in the Truk (central Caroline Islands)—Marshalls—Gilberts and Bismarcks (Rabaul)—Solomons areas, with shore-based naval air forces in the Marshalls and Truk—Bismarcks—Solomons areas. Search and reconnaissance were carried out by submarines and land-based aircraft. Defence was to be active, and raiding of advanced Allied bases and the United States carrier forces were provided for. The Mobile Fleet was now based at Truk in support. It consisted of the main strength of the Combined Fleet, namely the 1st Battle Squadron, the Second and Third Fleets (one battle squadron, four cruiser squadrons and two destroyer flotillas), a carrier squadron and two submarine flotillas. For a decisive fleet action the U.S. Pacific Fleet was, if possible, to be drawn within range of the naval air forces in the Marshall Islands, Truk, and Bismarcks—Solomons areas. In the event of the Americans being brought to action their carriers were to be attacked first and then in the case of an amphibious expedition the transports.

The progress of the Americans in the Solomons enabled them to bring so heavy a scale of air attack to bear on Rabaul that by the autumn of 1943 it was no longer an effective position and an attempt made early in November to base there a force of heavy cruisers of the Second Fleet for operations to relieve Bougainville in the Solomon Islands drew an immediate air attack by American carriers which caused such damage that the force returned at once to Truk with its fighting strength considerably impaired.

The defence line had already been drawn in during September 1943 largely on account of the heavy naval air losses sustained in the fighting in the South Pacific Area, which had put the carrier squadrons temporarily out of action as a fighting force. The Japanese had been driven out of the Aleutians in the previous month, and the vital defended areas were now reduced to those enclosed by the line Kuriles—Marianas—Carolines and Sumatra—Java—Timor. The defence of the Gilbert and Marshall Islands was left to the local troop and air garrisons, and when the American landings began in November 1943 the Fleet was not committed in opposition.

77. THE 'Y' OPERATION PLAN

Complementary to the plan for the defence of the Aleutians—Micronesia—Bismarcks areas there was a similar plan, termed the 'Y' Operation Plan, for the defence of the southern line through the Andamans—Nicobars—Sumatra—Java—Timor. If this line was threatened the main strength of the Combined Fleet was to be moved either to the Philippines or Singapore. If, however, there was a simultaneous threat necessitating the 'Z' Plan being put in operation only a portion of the carrier force was to be used. There were no naval forces in the area other than local defence forces attached to the South-west Area Command at Singapore and to the 2nd, 3rd and 4th Southern Expeditionary Fleets at Surabaya, Manila and Ambon respectively.¹ The shore-based naval air forces consisted of one air flotilla (about 150 aircraft), the main strength of which was in the Celebes with detachments at Manila and in northern Sumatra. In the autumn 1942 two more air flotillas (comprising the 13th Air Fleet) were added.

¹ The South-west Area Fleet at this time consisted of the 8-inch cruiser *Aoba*, five light cruisers (*Oi*, *Kitagami*, *Kinuu*, *Natori*, *Kashii*). The four old 14-inch battleships *Ise*, *Hyuga*, *Fuso*, *Yamashiro* were attached but were probably 'inactive,' *i.e.*, not intended for active operations.

78. THE 'A' OPERATION PLAN

The 'Z' Plan, in modified form remained in force until May 1944. By that time, the Gilberts and Marshalls had been occupied by the Americans and the Bismarcks and Truk neutralized and by-passed. The Japanese Fleet had been reorganized on 25th February in two main fleets, the Second and Third. The former normally consisted of the three 16-inch battleships, six heavy cruisers and six light cruisers, though not all the ships had joined the Fleet at its new base, Palau. The Third Fleet (Carrier Force) based at Singapore, was to consist of two 14-inch battleships, five carriers, five heavy and one light cruiser. At the end of the month the outer defence line was further withdrawn to the Marianas—Palau and Sumatra—Java—Timor—Western New Guinea and the battle fleet was moved to Singapore. A plan for the defence of this line, termed the 'A' Plan, was drawn up, and it was expected that the forces necessary to implement it would be ready towards the end of May 1944, when the naval air component had been rehabilitated and the five heavy cruisers damaged in the American carrier raid on Rabaul in the previous November repaired. A point had now been reached where the Japanese considered the fate of the Empire was at stake, and the object of the plan was to bring the American fleet to decisive action with the entire Japanese Mobile Fleet, that is, the battle units of the Combined Fleet. It was hoped to bring about the encounter close to the Mobile Fleet bases within range of land-based air forces, in the general area between the Central Pacific and the Philippines in the region of the Timor—Java—Sumatra line, decisive action being avoided until the Fleet was again in full strength after the losses and damage suffered in the fighting in the South Pacific. Should the Americans attack before the Fleet was ready it was to be counter-attacked with land-based air forces and local defence forces, though the former were to endeavour to avoid heavy losses unless there was a prospect of obtaining a favourable decision. In preparation for decisive action, priority was to be given to the construction of air bases and storage of fuel and ammunition, both for the Army and Navy shore-based air forces. These were to co-operate tactically and share all bases jointly.

The planned disposition of forces was: Naval Surface forces—the First Mobile Fleet, consisting of the 1st and 3rd Battle Squadrons; 1st, 2nd and 3rd Carrier Squadrons (450 aircraft); 4th, 5th and 7th Cruiser Squadrons, and two destroyers flotillas, in the Central and South Philippines. Naval Air Forces—the Base Air Force, about 990 combat aircraft, to be deployed in the Marianas—Carolines—Southern Philippines—Halmahera and Sorong (N.W. New Guinea) area. The 1st and 7th Submarine Flotillas (32 submarines) were to co-operate in the operation.

Preparations were never completed as planned, for the training of the air force, particularly the carrier groups, was some three months behind schedule. Nevertheless, when the Americans attacked Saipan in June 1944 the plan was set in motion. In the ensuing Battle of the Marianas three of the Japanese carriers and almost the whole of their carrier air groups were lost, and the shore-based air forces also suffered severe losses. At this stage of the war no recovery was possible, and future naval operations were conducted under a handicap that proved fatal.

79. THE 'SHO' OR OPERATION 'VICTORY'

The Marianas fell in July, and since the heavy losses suffered by the Japanese Fleet precluded any hope of recapture the defensive perimeter had once more to be reduced. The new line to be held ran from the Home Islands through the

Nansei Shoto, Formosa, Philippines and Timor—Java—Sumatra. It was thought that the next attack would be made on the northern part of the perimeter, probably after August 1944, and plans known as the 'Sho' or Operation 'Victory' Plans, were drawn up in July for decisive co-ordinated action by all land, sea, and air forces in defence of the Home Islands, Nansei Shoto, Formosa and Philippines. Only under favourable conditions would a decisive action be fought in defence of the Nanpo Shoto, the group in which the Bonin Islands are situated.

Four plans were drawn up for the following areas:—

- Sho No. 1—Philippines.
- Sho No. 2—Formosa—Nansei Shoto—South Kyushu.
- Sho No. 3—Kyushu—Shikoku—Honshu.
- Sho No. 4—Hokkaido.

Sho Nos. 1 and 2 were considered the most likely to be put in force, and priority was given to strengthening the defences in the relevant areas. In the defence of the Philippines the Army would only agree to undertake to fight to the last in defence of the northern part of the archipelago: if action were to occur in the central or southern part only air and naval forces would seek decisive action.

The enemy were to be destroyed at the point of attack, by air, sea and land forces concentrating on carriers and transports, opposition being withheld until the enemy were on the point of landing. This was in accordance with Japanese doctrine for opposing amphibious landings; the enemy should be destroyed at the water-line. The primary target for the naval air forces was to be the United States Carrier Task Force; for Army air forces the convoys. Counter-landings were to be made if favourable opportunities occurred.

The initial dispositions under the plans were governed by the necessity of stationing the main strength of the Combined Fleet near the source of oil supply at Singapore owing to the insecurity of the route through the South China Sea to Japan. They were as follows:—

(a) Naval Forces:

- (1) Inland Sea:—Third Fleet, consisting of the 1st, 3rd and 4th Carrier Squadrons (*see Air Forces below*) and two destroyer flotillas: Sixth Fleet, consisting of three submarine flotillas: 2nd Battle Squadron of Second Fleet.
- (2) Ominato (in North Honshu):—Fifth Fleet, consisting of 21st Cruiser Squadron and a destroyer flotilla.
- (3) Philippines:—Forces under the South-west Area Command, consisting of the 16th Cruiser Squadron and some destroyers.
- (4) Singapore Area (Lingga Anchorage):—Second Fleet, consisting of the 1st and 3rd Battle Squadrons, 4th, 5th and 7th Cruiser Squadrons, one and a half destroyer flotillas.

(b) Army and Naval Air Forces:

- (1) North-east and Home Islands areas:—Army, four air divisions plus Training Command aircraft. Navy, 3rd and 12th Air Fleets and air groups of the Third Fleet (*see Naval Forces, Inland Sea above*).
- (2) Nansei Shoto—Formosa:—One Army Air division and Naval 2nd Air Fleet (this air fleet was later sent to the Philippines).
- (3) Philippines—area north of Australia:—One Army Air Army and Naval 1st Air Fleet.