

THE PENANG SUBMARINES

*Penang and Submarine
Operations: 1942 - 45*

by

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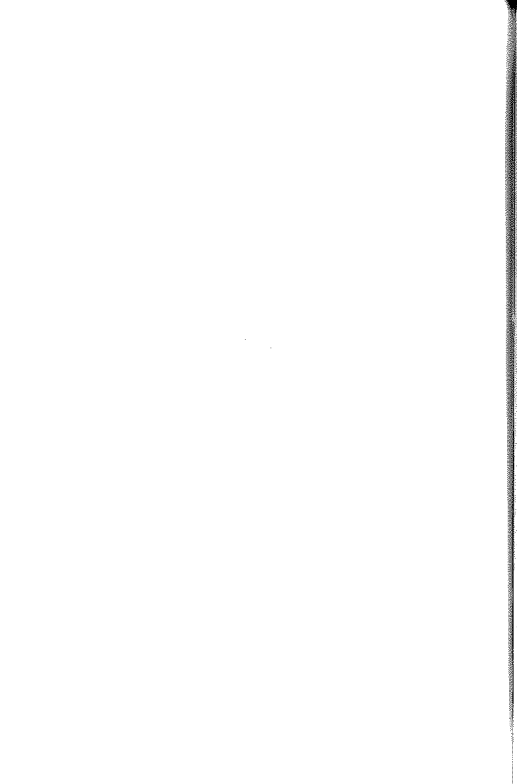
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1727
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*"The Cruiser's thund'rous screw proclaims
Her comings out and goings in :
But only whiffs of paraffin
Or creamy rings that fizz and fade
Show where the one-eyed Death has been,
That is the custom of the 'Trade' "*

(R. KIPLING. THE TRADE)

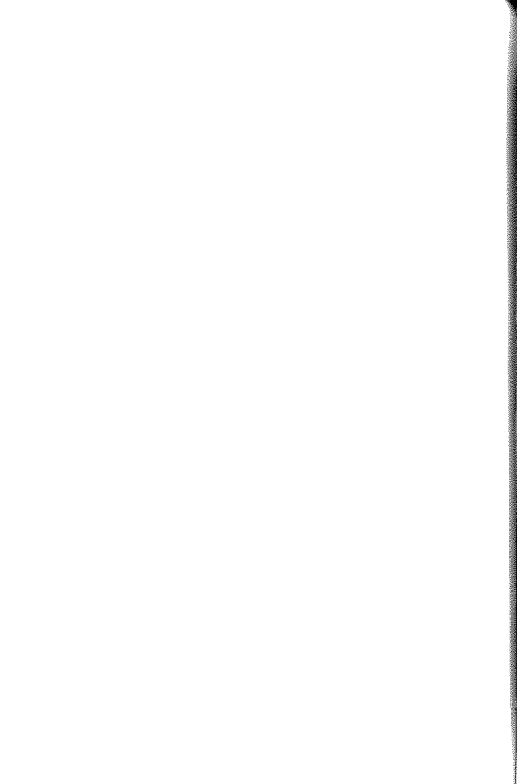


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CHAPTER I

PENANG SUBMARINES

The swift offensive mounted by Japan in December 1941 concluded within seven months. Japan then occupied a vast ocean-facing arc stretching from the Aleutian Islands in the North Pacific, sweeping down through the Philippines, turning north through the Dutch East Indies, and ending in the Andaman Islands and North Burma ports of the Indian Ocean. In the Pacific, after vicious land, sea and air contests centering upon Guadalcanal and the brilliant but almost incredible outcome of the Midway battle, the American offensive went from strength to strength, from island to island, to arrive in the Mariana Islands in an ideal strategic position by August 1944; well able to deliver a massive marine and air onslaught on Japan, with no fear of Japan achieving any comparable attack on Pacific bases, leave alone the U.S. mainland.

In the Indian Ocean and South-East Asia (a phrase coined to describe Admiral Mountbatten's area of operations), the offensive against Japan's Greater Asia Co-Prosperity Sphere was slower and less dramatic. The upper hand was gained on land in Burma in difficult conditions over a long period, for example Rangoon was not taken until May 1945.

Further south, the waters encircling Penang and running through the Malacca Straits were the scene of a naval contest on the fringe of Japanese occupied territory. Malaya, from the fall of Singapore until October 1944, lay outside the range of Allied aircraft. The two-fold responsibility for supplying guerillas within the peninsula and obstructing the flow of Japanese supplies through the coastal waters of Western Malaya therefore fell mainly upon Allied submarines. The conflict was intensified by the

Japanese decision to base submarines on Penang and raid the long Allied lines of communication across the Indian Ocean, stemming from Cape Town in the South and Suez in the North. Penang, a port passed over by the south eastward-seeking British in favour of Singapore in 1812, became a key position for the reverse movement of the victorious Japanese pendulum, 130 years later. The Imperial Japanese Navy wasted no time in putting into effect their plans for Penang. A week before the fall of Singapore, Penang became host to the Detached Workshop of the 101st Office of Naval Construction; routine repairs and maintenance could be undertaken on the Island whilst major overhauls necessitated a voyage to Singapore or mainland Japan. On the 25th February 1942 the Workshop expanded to become the base of the 11th Submarine Flotilla, which was in turn absorbed into the 8th Submarine Squadron Headquarters, established on the 19th April 1943. Japanese submarines bound for German-occupied Europe fuelled and departed the harbour on the long voyage around the Cape of Good Hope whilst German U-boats, providing the only operational example of German/Japanese co-operation, generally made Penang their first port of call and principal base in the Far East. Nine submarines, representing the navies of Japan, Britain, Germany, Italy and the United States, were lost in Malayan coastal waters and attest to the variety of interests as well as the grimness of the conflict.

Before Penang was occupied, Japanese submarines were active, when two, of the ten operational in Malayan waters, assisted in sinking the *Prince of Wales* and *Repulse*. Five British battleships or battle cruisers were sunk in World War II. The loss of two at the same time, in a critical situation and by novel means was principally a triumph for Japanese Naval aircraft, their crews and the strategic vision of Admiral Yamamoto. Commander Harada in I-165 sighted the ships travelling north-eastwards 300 miles from Singapore; he reported their course, speed and bearings (inaccurately it seems) on the afternoon of the 8th December. It was the 10th December at 3.40 a.m. when they were again sighted, this time by the I-156 which fired torpedoes that missed but sent

off a signal bringing down destructive, torpedo-carrying aircraft from an airfield north of Saigon. In European waters the battleship lingered on after this warning of threatened extinction. In Eastern waters, where naval techniques evolved rapidly, the battleship became the bodyguard of the carriers, a hulking anti-aircraft gun platform. Occasionally it was allowed to provide shore-bombardments but apart from actions off Guadalcanal and the Philippines, the battle-line was never to grapple in the way theorists had imagined and as it had in World War I. Sixty miles east of the unlikely port of Kuantan, the era of the domination of the seas by dreadnoughts came to an end. Air-power firmly demonstrated the pattern of the future struggle, whilst submarines, whose day would come with atomic power and missiles, played a modest role scouting and reporting.

The submarine teeth of the Japanese trap had failed, as it did at Pearl Harbour and again later, at Midway. The employment of submarines by the Japanese altered little, the scouting line was set again and again, invariably in an attempt to sink U.S. naval vessels in the Pacific. The unique feat of the U.S. destroyer-escort *England* in sinking six Japanese submarines in twelve days, came about in 1944 when she searched along a scouting line sinking them one by one. The close co-ordination and communication of the wolf-pack technique, originated by their German ally and adopted by their American enemy, was never employed by the Japanese. Their concept of submarine attack was to sink Allied naval vessels either by drawing them into a situation to their disadvantage, or by seeking them out. Interception of merchant shipping was never a serious consideration and in practice, Japanese submarines themselves became closely involved in shipping supplies to and withdrawing personnel from, the garrisons isolated by the U.S. island-hopping offensive in the Pacific.

Before 1941, submarines were given a strategic importance by the Japanese their later performance was never to justify. Two thirds of the submarine fleet were vessels of over 1,400 tons displacement with a high surface speed and long-range.*

*See Appendix III for details of Japanese Submarines.

They were equipped to carry midget submarines or an aircraft and intended for important operations that would sink capital ships or aircraft carriers. Superior U.S. equipment and anti-submarine technique kept Japanese submarines at a disadvantage and as a result, they fulfilled neither Japan's highest hopes nor the Allies worst fears.

When Admiral Nagumo sailed his fleet in daylight through the Straits of Malacca in early April 1942, he was returning from his sudden Easter raid on Ceylon and bringing to a close 4 months of brilliant achievement which had begun with the raid on Pearl Harbour. In the wake of his imperious sweep, the first and last foray of capital ships of the Japanese fleet into the Indian Ocean, an interesting flotilla cleared Penang. Their purpose was to maintain the offensive with a dramatic thrust at the South and East African seaboard.

Under Rear-Admiral Ishizaki, the 1st Division of the 8th Submarine Flotilla consisted of five large ocean-going submarines, *I-10* (flagship), *I-16*, *I-18*, *I-20* and *I-30*. Originally based on Kwajalein in the Marshall Islands, they were the major part of a strategic offensive against Allied sea communications in the Indian Ocean. *I-30* was recently commissioned and left a few days in advance of the others, arriving off Aden she moved southwards along the E. African shore observing merchant shipping routes and searching unsuccessfully for main units of the Royal Navy. The other four submarines had been operational in the Pacific and taking a more direct route, they arrived off Madagascar toward the end of May. Accompanying the First Division as supply ships were two auxiliary cruisers, *Aikoku Maru* and *Hokoku Maru*. Apart from the capture by the auxiliary cruisers of the Dutch tanker *Genota* (8,000 tons), 480 miles S.S.E. of Diego Suarez on May 9, no attacks were made on shipping by any member of the group.

In the early morning of May 5, an Allied fleet had begun to assault the island of Madagascar and within three days had

captured the splendid harbour of Diego Suarez. The island was not to be finally surrendered by the Vichy French until 5th November 1942; before then, the First Division brought off a daring and courageous attack. A sea plane flew slowly over the Diego Suarez harbour at 22.30 hour on the 29th May, it was not intercepted although identified as an enemy aircraft and thought to be from a Vichy air station. The battleship *Ramillies* was moved from her berth as a precaution, whilst the sea plane, which was Japanese, returned to its parent ship, *I-10*.

I-16, *I-18*, and *I-20* were ordered by Rear-Admiral Ishizaki to approach the harbour and make an attack with their midget submarines. After dark on 30th May from a position 10 miles from the harbour, *I-16* and *I-20* launched their midgets but *I-18* had a malfunction and had to withdraw with her two-man midget still on board. At 20.25 the *Ramillies* was hit by a torpedo which flooded one compartment; jettisoning oil and ammunition, she left the next afternoon to make her way to Durban for repairs and took no further part in operations against the island. (130 years earlier in the War of 1812, a Royal Naval vessel similarly named *Ramillies* was subjected to one of the earliest recorded submarine attacks. An American submersible attempted to attach an explosive charge against the hull of the British ship. The screw which affixed the guncotton broke and the *Ramillies* on that occasion escaped.)

A 7,000 ton tanker *British Loyalty* was also torpedoed and settled in water sufficiently shallow for her to be salvaged. On June 2, two surviving members of the *I-20*'s midget submarine were killed on the island by a Commando patrol. From their bodies papers were taken which reported the sinking of two vessels in Diego Suarez harbour and the loss of the midget submarine on a reef when retiring, *I-16*'s midget submarine was never recovered and nothing is known of its fate.

The group now turned away from strategic attack and conducted an intensive campaign against merchant shipping. Whilst

the two auxiliary cruisers withdrew well to the east of Madagascar, the submarines ranged the Mozambique Channel. The waterway between Madagascar and the E. African coast carried most of the supplies despatched to the 8th Army in North Africa. The Mediterranean was at this time closed to Allied convoys and Cape Town served as a focal point, not only for ships northward bound for the Red Sea and Suez, but also for those routed for Bombay, Colombo and Calcutta with stores for the forces in Burma. From the 5-12 June, First Division submarines sank eleven merchant ships, they then withdrew to reprovision and refuel from the *Aikoku Maru* and *Hokoku Maru*, before returning to the Mozambique Channel to sink another 9 merchantmen for a total tonnage of 120,000 tons, sunk in a month of operations.

I-30 after refuelling, did not return with the others to raid the Mozambique Channel. Under Commander S. Endo she sailed via the Cape of Good Hope to become the first submarine of the Tokyo Berlin Axis to voyage into an ally's harbour. The early July weather gave her a rough passage through the "Roaring Forties" but no other hazards impeded her northern progress. German minesweepers successfully rendezvoused and escorted her across the Bay of Biscay until on August 5 she tied up in the submarine pens at Lorient. A month passed in taking on war cargo and supplies for the return voyage; Commander Endo was decorated and passed on the results of his reconnaissance of the E. African coast, significantly bare of convoys, escorts and air patrols but rich in singly sailing merchantmen. Then *I-30* began the homeward voyage. In October she arrived in Singapore. At 16.30 on 13 October 1942, only three miles east of the port and making her way on the last leg of the voyage to Japan, she struck a British mine. Thirteen petty officers and sailors were killed out of the hundred personnel on board and her valuable cargo lost.

Untouched by antisubmarine vessels or aircraft, the remainder of the group had made off to the east in mid-June, the four submarines returning to Penang whilst the auxiliary cruisers put into Singapore. The two *Marus* had made a modest contribution

to the undertaking by sinking two ships, *Elysia* (6,750 tons) and *Harouki* (7,110 tons), and capturing one, the *Genota*. Their next voyage into the Indian Ocean, in November 1942 was disastrous. Chancing upon a 6,340 ton Dutch tanker, *Ondina* and her 650 ton Royal Indian Navy escort, *Bengal* 500 miles south-west of the Cocos Islands, the *Hokoku Maru* needlessly came too close to the allied ships and was blown up. The *Aikoku Maru* fired two torpedoes into the tanker and machine-gunned the lifeboats before turning back to her sinking sistership. As the *Ondina*, despite burning fiercely, showed no signs of sinking, she was reboarded by her crew who sailed her back to Australia. The *Bengal*, imagining the worst had befallen *Ondina* kept on to Colombo, where it was learnt that their combined firepower comprising a 4 inch gun (*Ondina*), a 12-pounder, a Bofors and two Oerlikons (*Bengal*) had sunk one auxiliary cruiser and driven off the other. *Aikoku Maru* was withdrawn to the Pacific and there, on 17 February 1944 she was sunk by U.S. Navy carrier-based aircraft.

The South West monsoon diminished in September and in the three-month pause before the onset of the North West cycle, sinkings in the Indian Ocean, including those by submarines, rose from 30,000 tons (6 ships) in September, to 63,500 tons (11 ships) in October and 131,000 tons (23 ships) in November. Altogether 205 ships of 724,485 tons were sunk in the Indian Ocean in 1942, some of the vessels were not big (the Official History * tables 65 ships sunk in March for a total tonnage of 68,539), some 112,000 tons were sunk by a Japanese raiding Squadron in the Bay of Bengal in April and 127,000 tons were torpedoed by five raiding U-boats in the Mozambique Channel in November. The bulk of the impressive remainder fell to the Penang-based Japanese submarines. Following up the sweep of Japanese arms over Asia, they had impeded sea-communications in the Indian Ocean and threatened heavier sinkings on the long, sensitive trade routes in 1943. Fortunately the threat never fully materialised for despite the addition of German U-boats, Allied merchant ship sinkings in the Indian Ocean were never again to reach six figures in a month. In the North Atlantic, Allied technical advances and experience

*Roskill, S.W., *The War at Sea*, H.M.S.O., 3 vols.

gradually gained the upper hand over the hard-pressed U-boats, whilst the Pacific victories of the United States drew off Japanese submarines from the Indian Ocean, revealed their inadequate defences and incompetent methods and relentlessly sank them.

No Allied merchantmen were sunk in the Indian Ocean in January 1943; 15,787 tons were sunk in February, rose to 62,303 in March and eased to 43,000 in April. In the latter month, *I-29* (Commander T. Kinashi), cleared Penang and rendezvoused with *U-180* (Korvettenkapitan Musenberg) 400 miles S.S.W. of Madagascar. The weather made communication between the submarines difficult, but Subha Chandra Bose was safely ferried to the *I-29*. Over a period of a week, two tons of gold, three torpedoes of recent design, two Japanese officers and some quinine were taken aboard *U-180*, which sank a Greek freighter 270 miles from Ascension on her successful voyage home. *I-29* left the rendezvous and put Chandra Bose ashore in N. Sumatra, undoubtedly carrying German hopes for a success similar to Lenins' in World War I. Later in 1943, after conferences with senior Japanese officials, Chandra Bose assumed responsibility for the Indian National Army and visited the Sandicraft School, Penang. Captain Mahmood Khan Durrani,* the officer-in-charge, was simultaneously directing and sabotaging the training of agents who were to be landed in India by Japanese submarine.

Only two or three Allied submarines were available for patrols into the Straits of Malacca and Penang waters and this may account for the remarkable presence of the U.S. submarine *Grenadier* (SS 210).†

The East Indies Command was a British sphere of responsibility embracing the west coast of Malaya and the sea area to the west. The east coast of Malaya and China Sea was an U.S. operational command, known as South West Pacific Area. The *Grenadier* left Fremantle on 20 March 1943, kept west of Sumatra as far north as the Andaman Islands and then turned south to Puhket Island. Commissioned to investigate and destroy enemy

*Mohmood Khan Durrani. *The Sixth Column*, Allen and Unwin.

†See Appendix IV for details of Allied Submarines.

shipping, *Grenadier* had photographed the harbour on the Island of Sabang and at 0830 on the 21 April was travelling at speed on the surface in an attempt to fulfill the second of her duties. She was sweeping around the flank of two Japanese ships in order to make a submerged attack from ahead. Suddenly a Japanese heavy bomber was seen boring in, no doubt attracted by the high-speed wake trailing astern of the submarine. *Grenadier* dived but two bombs detonated close aboard as she passed the ninety ft. mark. Lights went out, gauges shattered, hydraulic steering and stern plane gears went out of commission, electric fires started, propeller shafts were warped and the after torpedo-tube doors forced out of true. Lt.-Commander J.A. Fitzgerald kept her on the bottom in forty-five fathoms and the crew fought fires and rigged repairs. At night *Grenadier* surfaced, there on the waters of Lem Voalen Gluf it was apparent that damage prevented the boat getting under way or diving again.

Just after dawn ships were sighted and a Zero fighter made an approach but was shot down after it had prematurely dropped its bomb. At 0830 on the 22 April, the submarine was abandoned, flooding valves opened and the hatches left agape. Two Japanese vessels picked up the crew, who were taken to Penang for interrogation and imprisonment. Japanese interrogation followed the crew from Penang to Seletar (Singapore) and finally to Japan; four died there at Fukuota, the rest survived to see Allied victory.

The only Japanese submarine to make the round voyage to Europe and return to Japan, cast off from Swettenham Pier, Penang on the 6 July 1943 under Captain Shinji Uchino.

I-8 was an ocean going submarine of 2,000 tons, even so conditions must have been cramped for apart from the additional stores necessary for a long voyage, she carried an extra crew to bring back the *RO 501* (launched in Hambourg on the 7 July 1943), a Type IXC U-boat of 1,120 tons. The U-boat was one of two given Japanese constructors by Hitler as a model of modern German submarine ideas and methods. Admiral Fukutome was to

comment that they were small and therefore of little value to the Imperial Japanese Navy. Only one reached Kure, Japan (via Penang, *U-511* —with a German crew— in July 1943) when the Japanese were thinking of submersible aircraft carriers of 3,500 tons. Korvetten Kapitän Schneewind of the *U-511* (re-named *Marco Polo* and made over personally to the Emperor) was later to take command of the *U-183* when her captain died of a heart-attack in Penang.

South of the Azores *I-8* rendezvoused with a German U-boat and transferred the latest radar search gear for the perilous approach into the Biscay area. After a sixty-one day voyage, escorted by destroyers and minesweepers, *I-8* nosed through the fresh waters of the Iroise estuary and tied up at Brest. The spare crew must have become familiar with Hambourg because it was not until May 1944 that they took *RO 501* (ex *U-1224*) away on the passage to Penang. On the evening of the 13th May, the U.S. destroyer *Francis M. Robinson* detected the submerged submarine in mid Atlantic and sank her with two depthcharge and one hedgehog attacks. There were no survivors.

I-8 loaded several hundred tons of torpedo machinery, 4-barrel machine guns, aircraft machinery, watches and with nine German technicians on board, in late September set out for the Far East. South of the equator, to her captain's surprise, she was bombed by Allied aircraft but sustained no serious damage. Her radio transmissions were picked up by S. African shore stations; aircraft sweeps and ship patrols were sent out to search for her but no contract was made and she reached Singapore through the Sunda Straits after a Sixty-four day voyage. In December she set off on the last leg and reached Japan safely. In early 1944, the boat returned to her base in Penang and under a new captain, Commander Ariizumi, added the barbarous murder of merchant seamen to what would otherwise have been a distinguished operational history, for the submarine had sailed through 240° of latitude, from San Francisco to Brest and entered three major ocean conflicts. Between September and December 1944, *I-8* was withdrawn

to the Pacific and sunk off Okinawa by the U.S. destroyers *Morrison* and *Stockton* on 31 April 1945. The Commander responsible for the massacre of unarmed merchant seamen, Dutch in the case of the *Tjisalak* and Americans from *Jean Nicolet* was Tatsunosuke Ariizumi. Ninety-eight survivors were butchered from the *Tjisalak* and ninety-six taken from the water when the *Jean Nicolet* was torpedoed between the Chagos and Maldiva Islands on the 2 July 1944. The latter had their hands bound and after broken English hectoring from Commander Ariizumi were hacked and stabbed as they passed along a line of laughing Japanese sailors armed with clubs, swords and bayonets. Thirty-five were left when the submarine suddenly dived; twenty-three survived by freeing themselves from their bonds and clinging to wreckage until found by a ship summoned by a searching aircraft.

Commander Ariizumi was promoted and later in 1945, given command of one of the 3,500 ton I-400 class, submarines capable of carrying 3 torpedo-bombers and intended for a raid on the locks of the Panama Canal. Captain Ariizumi, Senior Officer of these submarines, shot himself entering harbour at Yokosuka in August 1945, after the war had ended.

CHAPTER II

EASTERN ENTERPRISE : THE U-BOATS

In early 1943, German submarines began to operate in the Indian Ocean and by the end of the year were based upon Penang. Their saga has been summed up as,

“— misconceived, misdirected and tragically wasteful in spite of the devotion to duty, the valiant efforts, sacrifices and successes of the Far Eastern U-boat cadre”.*

and to this one might add “unsung”. Admiral Doenitz in his memoirs, “Ten years and twenty days” gives a scanty, ill-balanced page and half to an unquestionably courageous enterprise, sending his U-boat crews half-way around the world to badly equipped bases and less than capable Allies. Of the forty-five German submarines that set out for the Far East from Europe, only three returned to German or German-occupied ports, (another was diverted to the Caribbean and returned to base); of these, two were blown-up in the U-boat pens at Bordeaux when the Allied invasion reached that port and one survivor was afloat at Trondheim when victory in Europe was declared. Two others arrived in European waters in time to surrender in May 1945 whilst another put in to New Hampshire, (U.S.A.), when outward bound for Tokyo, on hearing of Germany’s capitulation. Four submarines were interned by the Japanese after Germany’s surrender and thirty-five boats were sunk, twenty-five on passage through the Atlantic Ocean. Two were returning from the Far East, the others were sunk, captured, or scuttled outward bound and this makes the success of the remainder

*Saville, A.M., *German Submarines in the Far East*,
U.S. Naval Institute Proceedings, August 1961.

all the more remarkable. Twenty U-boats actually took part in operations in the Indian Ocean and between them sank 150 ships of nearly 1,000,000 tons. In addition four Italian-built, German-manned submarines sailed for the East. One was sunk off the Cape of Good Hope, one was torpedoed in the Straits of Malacca and the two survivors, after abortive attempts to return to Europe, were taken over by the Japanese Navy, following Germany's defeat.

The presence of German submarines in the Indian Ocean invites the question, why were they there? It would seem to be a natural sphere of operations for the Japanese, who at the time, had the largest ocean-going submarines in the world and should not have needed assistance. In fact, by June 1942, within the 6 months Admiral Yamamoto had predicted success for Japanese arms, American defence in the Pacific had stiffened. Tokyo had been raided on April 14th by General Doolittle's bombers and the American counter-offensive had begin to stabilise itself. The German Naval Attache' in Tokyo, Admiral Wencker, tried to establish co-operation between German and Japanese marine effort including the exchange of supplies and technical information. Eventually he obtained a Japanese proposal on the use of occupied ports in S.E. Asia by U-boats, surface raiders and blockade runners.

But Doenitz, in the winter of 1942/3 was in no great hurry to act upon the offer as far as submarines were concerned. In the North Atlantic, his U-boats had fought a thoroughly successful year. Nearly 5½ million tons of Allied shipping had been sunk in 1942 and Doenitz' strategy of sinking more ships than the Allies could build was verging on success. U-boats were commissioning faster than the Allies could sink them and it was clear to the planners in the U-boat Command at Kerneval, France, that no relaxation or diversion should be allowed to imperil the outcome of the Battle of the Atlantic. The Battle of Midway in June 1942, when Vice-Admiral Nagumo lost four irreplaceable aircraft-carriers with their highly trained and experienced crews, had its counterpart in May 1943 in the Battle of the Atlantic. Thirty-seven U-boats were

destroyed in one month, a new offensive by aircraft began in the Bay of Biscay and as a result, Allied shipping losses were the lowest since December 1941. In their conduct of the war at sea, the Germans and Japanese were fighting back to back, looking out onto the great oceans of the Atlantic and Pacific. Between them lay the Indian Ocean. The East Coast of Africa had been seen by Doenitz in 1942 as a worthy target for small numbers of U-boats. From 1942 until May 1943 no convoys had passed through the Mediterranean; supplies and men were sent around the Cape. Attracted by the concentration of shipping, *U-68*, *U-172*, *U-504* and *U-459* (U-tanker) later joined by a new Type *IXD2* boat of 1,600 tons and 30,000 miles range, *U-179*, arrived in October off Cape Town and in the course of the month sank twenty-four ships of 161,000 tons. *U-179* sank one ship, but shortly after her arrival was surprised on the surface during the night of the 8 October and sunk by H.M. destroyer *Active*. In November 1942 a new group, *U-159*, *U-177*, *U-178*, *U-181*, *U-195*, rounded the Cape and in the waters south of the Mozambique Channel sank another twenty-four ships of 127,000 tons. This swift second strike, code-named "paukenschlag" (drum-roll) was the first sortie by U-boats into the Indian Ocean; it was the last to return whole to European harbours. Sinkings fell to 23,000 tons in December as the submarines returned northwards, leaving the Allies only too well aware of the vulnerability of the Cape route to attacks from both East and West.

In February 1943, U-boats assisted by five Italian submarines based on Eritrea, were again active in the Indian Ocean. *U-68*, *U-160*, *U-182*, *U-504* and *U-516*, with their Allies sank twenty-five ships of 149,000 tons in operations lasting until the end of May. No longer accompanied by a U-tanker, fuel and provisions were provided by two tankers, *Charlotte Schliemann* (7,000 tons) and *Brake* (10,000 tons), both keeping station south of Madagascar. *U-182* did not survive the voyage home and was sunk off the Azores in May at a time when a further group was on its way south, comprising *U-177*, *U-178*, *U-181*, *U-196*, *U-197*, *U-198*. Aircraft of the R.A.F. flying from Madagascar sank *U-197* on the 20th August, but this did not stop the pack from sinking 165,000 (34 ships) tons of shipping before they turned from the western Indian Ocean for home. *U-178* also a Type *IXD2* was the significant exception.*

*See Appendix I for details of the U-boats.

She refuelled with the others from *Brake* and then set course for the long passage to Penang where she tied up at Swettenham Pier after 156 days at sea. A year previously she had taken part in the "paukenslag" under Kapitanleutenant Hans Ibbeken, when she had sunk six ships of 47,100 tons. On the 28 August 1943, she became the first German U-boat (apart from *U-511*) to voyage into a Japanese occupied port.

Commanded by Kapitanleutenant Wilhelm Dommies, *U-178* entered Penang in company with another submarine, the Italian *Torelli* (Meler), later to be designated *U It-25* when she and four sister ships were taken over by the German Navy, upon Italy's surrender. Dommies had sunk six ships, mostly round the Cape and during operations off Lourenço Marques in the Mozambique Channel. On the 7 August 1943, Dommies had been asked if *U-178* would be fit materially and personally (he had been sick) after a refit in Penang. Receiving an affirmative reply, the Bureau de U-boats directed the *U-178* to refuel *Torelli* and for them to proceed together to Penang. *Torelli* later went to Kobe for repairs and at the end of the war, was still in the Japanese harbour.*

U-178 was made ready for the return voyage at a time when Korvettenkapitan Dr. Kandeler, recently arrived from Djakarta to take command of the Penang base, was busy with reception details for the First Monsoon Group. Dommies was still sick and so with Kapitanleutenant Spahr in command, *U-178* left her newly arrived colleagues on November 27, 1943 to return to Europe, 200 miles south of Mauritius, *U-178* refuelled from the *Charlotte Schliemann* and in turn gave fuel to *U-532* on 27 February. Another refuelling rendezvous with a Penang-bound submarine *U It-22 (ex-Bagnolini)* under Kapitanleutenant Wunderlich was arranged 600 miles south of Cape Town. South African forces had been alerted by the exchange of signals concerning the rendezvous and at 1022 on 11 March 1944, a Catalina of the South African Air Force came upon the *U It-22* travelling on the surface. Five depth charges were dropped nearby and the

*See Appendix II for details of Italian Submarines.

submarine submerged listing heavily; when she reappeared later, she was again depth charged by another Catalina and sank in a vast, calming pool of oil. The oil slick and flotsam but no survivors were found by the *U-178* the next day. Another rendezvous with a U-boat took place off Ascension Island to assist with repairs, and Kapitänleutenant Spahr finally reached Bordeaux on 25 May 1944 running on much-patched diesels. The invasion of Europe swiftly followed the homecoming. *U-178* was blown up on the approach of U.S. armoured forces on 20 August as no new batteries were obtainable and she could not move.

The First Monsoon Group, which had entered Penang just before the departure of *U-178*, left its French, German and Norwegian bases in June and July 1943. Although named after the monsoon, its arrival in the Indian Ocean was timed to miss the South-West monsoon "which with its heavy seas and bad visibility was unsuitable for operations" (Doenitz). The significance of the Monsoon Group lay in the decision to base U-boats upon Penang. Four operations made against Allied merchantman on the Cape of Good Hope shipping lanes and north as far as the Arabian Sea had proved to be thoroughly successful. Japanese reasons for now welcoming German participation in a Japanese sphere of operations are relatively easy to discern. Thrown on the defensive in the Pacific, they were grateful their ally could afford to deploy, what was potentially, an ocean-dominating weapon. The earlier success of five Japanese submarines in Madagascar waters, would cause speculation about the effect of twice that number of U-boats and justify their presence in the Japanese Greater Asia Co-Prosperity-Sphere. For the German U-boat arm, there was more at stake than a gesture on behalf of an ally. The North Atlantic was the principal battleground where the U-boats could win or lose the war. If the vital Allied supply-line could be severed, the assault on Fortress Europa could not be made. But the early months 1943 showed rapidly increasing U-boat losses without any com-

pensating loss of merchantmen. Cost effective studies indicated U-boats would have to hunt elsewhere until an answer had been found to improved convoy systems, new anti-submarine techniques by escorts and intensive, radar-equipped aircraft patrols. A round trip through the Indian Ocean via the Japanese held base offered new areas for exploitation and would be ideal for the newly commissioning big Type *IXD2* boats designer for long-range operations.

An additional reason for creating a communication link was the shortage in Occupied Europe of essential raw materials, owing to the Allied blockade. Tungsten, wolfram, rubber, tin and quinine were needed but the surface blockade-runners had proved unable to carry the supplies through the Allied cordon. U-boats, once their torpedoes were discharged, were seen by the German High Command to be a useful means of transporting war materials from the Far East. Two Italian submarines (after Italy's capitulation in September 1943, German crews took over Italian submarines and the prefix *U It* for *Unterseeboot Italienisch* was assigned with a number in place of the Italian name) had been despatched before the Monsoon Group left, with transport tasks scheduled. *U It-24 (Pals) (ex-Cappellini)* left Bordeaux on the 11 May 1943 and reached Singapore on the 13 July. She was not a success. In January 1944, she set out for Europe laden with 115 tons of rubber and 55 tons of tin; battery trouble in the S. Atlantic forced her back to Penang and then on to Kobe for major repairs. Interned by the Japanese after victory in Europe, she was renumbered *I-503* but never served operationally. *U It-23 (Streigler) (ex-Giuliani)* left Bardeaux on the 21 May 1943 and reached Singapore on the 1 August. She was used as a transport between the German bases in Penang and Singapore, and was despatched to Europe via Penang in February 1944. At 0525 on the 15th she was sighted northbound in the Malacca Straits by H.M. submarine *Tally-Ho** (Lt.-Commander L.W.A. Bennington) and at 0600 hours, *U It-23* was hit just forward of the conning-tower by a torpedo fired from *Tally-Ho*.

See Appendix IV for details of Allied Submarines.

Survivors were flown to Penang, lashed to the floats of an Ar 196 float-plane sent out to look for the U-boat when concern was felt at her non-appearance in Penang. Most of the crew along with men seconded from the tanker *Brake* and survivors from the armed raider *Michel* (sunk 120 miles south of Tokyo Bay on 17 October 1943 by U.S. submarine *Tarpon*) were on deck and the loss of life was less than it might have been. Another Italian vessel with an interesting history in the Far East was the *Eritrea*. Built for the use of the Governor of the Italian colony, she escaped when British troops occupied Somaliland and subsequently became an escort vessel used by the Japanese in Penang. Designed as a yacht, *Eritrea* was air-conditioned and had very handsome lines. Just prior to Italy's capitulation on 8 September 1943, *Eritrea* cleared Penang ostensibly for Singapore and escaped to Trincomalee where she served as an escort and training target vessel for the Royal Navy's 4th Submarine Flotilla. Although her Italian captain and crew would know about the routing, refuelling and rendezvous of U-boats bound for Penang, no particularly successful interceptions took place that can be ascribed to interrogations. Commander Young admired her fine appearance and noted with surprise she still flew the Italian ensign when she escorted his submarine *Storm* into Trincomalee in February 1944.

The First Monsoon Group was made up of nine Type *IXC* and two Type *IXD2* boats accompanied by two U-tankers. Seven submarines of the Group were sunk by aircraft in the disastrous first month or so of its history.

U-200 (Schonder) sortied from a Norwegian base and south of Iceland on 24 June, was sunk by U.S. long-range aircraft of VP-84 which were covering the movements of a nearby convoy.

U-514 (Aufferman) was caught on the surface on July 7, off Ferrol in the Bay of Biscay by Liberators of 224 Squadron

R.A.F. The aircraft were fitted to fire rockets and a new acoustic torpedo. *U-514* had been instrumental in the sinking of seven tankers in the Caribbean in January 1943, when she had reported their course and speed to a wolf pack laying on the convoy route.

U-506 (Wuerdeman) was found in the outer Bay of Biscay, off Finesterre by a Liberator aircraft of No. 1 Anti-Submarine Squadron, USAAF and sunk on the 12 of July. In September of the previous year she had taken part in the dramatic rescue of the *Laconia* passengers and had been attacked (fortunately, the bombs missed) with 142 survivors on board. Aircraft methods of attack had improved in the intervening ten months, nowhere more than in the notorious "Bay".

U-487 (Metz), a "milch cow" or supply submarine was sighted by American aircraft of VC 13 flying from the escort carrier U.S.S. *Core*, and was sunk, north-west of Cape Verdes Islands on 13 July. Its crew, surprised by a Wildcat fighter, in the act of taking aboard a bale of cotton rallied sufficiently to shoot it down. From the subsequent attack there were 33 survivors.

U-509 (Werner Witte), under Fregattenkapitan Wolff had daringly entered Casablanca harbour at the time of the Allied invasion in November 1942. A mine had exploded near her stern and forced her to leave. On the 15 July 1943 Avenger and Wildcat aircraft of VC 29, flying from the escort carrier U.S.S. *Santee* sighted the U-boat in the early morning and delivered an acoustic torpedo attack. There were no survivors.

U-462 (Vowe) another big 1600 ton "milch cow" in company with two other U-boats for mutual anti-aircraft protection, was making its way through the outer Bay of Biscay area when the group was discovered by a patrolling Liberator. Other aircraft were called to the scene and all three U-boats were sunk. A homing torpedo first damaged *U-462* followed by an attack from a Halifax bomber which sank her at 11.00 a.m. on 30 July.

U-847 (Kuppisch) had refuelled and provisioned five *U*-boats since 19 August when on the 27th she was sighted and attacked by aircraft from U.S.S. *Card*. A homing torpedo was dropped which set off submarine detonations heard aboard the nearby *U-508*, (to be sunk by aircraft three months later) and *U-172* (sunk by aircraft and destroyers four months later).

U-516 (Tillessen) refuelled two of the Group and was then diverted to the Caribbean, never to take part in Indian Ocean operations.

The remainder, *U-168* (Pich), *U-183* (Schaefer), *U-188* (Luedden), *U-532* (Junker), *U-533* (Henning) were refuelled by tankers off the Cape of Good Hope and spread northwards past Madagascar, into the Gulf of Aden and off the west coast of India. Assisted by Japanese submarines they sank twenty-one ships of 121,625 tons and then sailed across the Indian Ocean to tie up at Swettenham Pier, Penang in October/November 1943.

One of their number failed to reach Penang. After refuelling from the tanker *Brake*, *U-533* had sailed north and sank a merchantman in the narrows separating the Persian Gulf from the Gulf of Oman. She was one of two *U*-boats in Arabian waters, the others being active off Mombasa, Colombo and Bombay. On Sunday 17 October 1943 she was attacked and sunk by a Bisley aircraft of 244 Group R.A.F. Seaman Guenther Schmidt was in the conning-tower and made a remarkable escape through the conning-tower hatch in his escape gear. He was the sole survivor and after twenty-eight hours in the water was washed ashore on the Arabian coast. Cared for by Arabs, he was later found by a British patrol and flown to Cairo for interrogation and internment.

The four boats of the Monsoon Group plus the *U-178* joined three ex-Italian submarines at their berths in Penang. Their arrival coincided with the sinking of the Japanese submarine *I-34* and this must have served to remind them that although a long way from Europe, the Royal Navy had not overlooked the sally-

port from which sailed the submarines in search of Allied merchantmen in the Indian Ocean.

I-34 was a big ocean-going submarine of 2,000 tons, completed after the outbreak of war. On the 11 November 1943, she left Singapore loaded with a cargo of rubber, tin, tungsten and quinine destined for Germany. With a subchaser as an escort, *I-34* was travelling on the surface in the approaches to Penang when she was sighted at 0454 on the 13 November by H.M. Submarine *Taurus* (Lt.-Commander M. Wingfield).

Rain-squalls obscured the target which was hit by some of the six torpedoes fired at 0504 at a range of 5,000 yards. *I-34* went down on a bearing of 218° and distance of 18,000 yards off Cape Muka Lighthouse. When *I-34* sank, the escort turned toward the *Taurus*, which in attempting to avoid the attack, went too deep and stuck on the bottom. Depth-charges blew *Taurus* free and her captain decided to surface and fight a gun-action with the Japanese vessel. When an aircraft appeared, Commander Wingfield submerged and withdrew. The day previously, two inward bound U-boats of the Monsoon Group had been sighted by *Tally-Ho*, which had been unable to reach a favourable position for an attack. A week earlier on the 6 November, five torpedoes were fired by the same submarine at an incoming U-boat (either *U-168*, *U-183*, *U-188* or *U-532*) but dusk conditions caused a miscalculation, the spread missed and the U-boat escaped.

I-34 sank in only 10 fathoms of water and her cargo was thought sufficiently valuable for the Great Eastern Salvage Company to begin work on her in 1961. Two Royal Navy divers undertook the ticklish task of removing six primed torpedoes from the sunken hull. The submarine was cut and lifted in three sections and the bodies of the crew, about fifty were found, were cremated in a specially constructed shrine in a Penang bay; the ashes were later flown to Japan. Straits Trading Company refined some of the tungsten and found it to be, remarkably, of Spanish

— not Malayan — origin. The ship's bell of the *I-34* was given to the Mariner's Club, Penang, today the only tangible remnant of the submarine left above the sea.

In Penang fascinating tales have circulated of bullion taken from the wreck by divers who concealed gold bars in the sleeves of their diving suits. The story goes on, the divers later had the bullion concealed in their lead-boots and in this way smuggled gold into Singapore, England and elsewhere. Similar tales are told of jewels. Unfortunately for the spinner's of mariner's yarns, bullion was not Germany's prime need in 1943 with the whole of Europe in her grasp. Rubber, tin, tungsten, asbestos and quinine (Japan's occupation of the quinine producing countries drove the Allies to evolve synthetic substitutes and led to the development of M and B tablets and their derivatives) were vitally-needed war-cargoes and far more likely to appear in a blockade-runner's cargo-manifest.

In early November, *I-29* (Commander Kinashi), another 2,000 ton ocean-going submarine, left Penang and set off on a blockade-running mission to Europe. A modern vessel, completed since the outbreak of war, she was no stranger to the Indian Ocean as she had attacked shipping and completed another war patrol since her May arrival with Chandra Bose. 400 miles north-west of Diego Garcia she sank the tanker "*Scotia*" (10,000 tons) on the 27 November and although her radio transmissions were received at direction finding posts in South Africa, patrols failed to intercept her. Information about *I-29*'s progress was passed on to the Admiralty in London where her estimated time of arrival in European waters was computed and a listening watch maintained for further transmissions.

On the 10 March 1944, *I-29* was met off the north Spanish coast by an escort of four torpedo-boats and eight Ju 88 long-range fighters. A fierce air/sea battle began when Coastal Command "Tsetse" mosquitoes, each armed with a 6 pounder cannon, attack-

ed the submarine. Liberator bombers kept the torpedo-boats occupied whilst Mosquito fighters overwhelmed the Ju 88's and shot four of them down. *I-29* survived this reception and entered Bordeaux the next day. Her cargo was unloaded and new technically advanced weaponry stowed in its place. On the 16 April she left Bordeaux and in July arrived safely back in Singapore. Installed on board was the latest German radar and no qualms were felt by the captain for the onward move. Leaving on the 22 July, he set course for Kure on the last leg of the voyage back to mainland Japan. Three days later he reported sighting an enemy submarine and this signal may have been his undoing. On the 26 July 1944 at 1645 hours, *I-29* was struck and sunk by two torpedoes fired from the U.S. submarine *Sawfish** in the Bashi Channel off S. Formosa.

Four more German submarines formed a "Second Monsoon Group" and left European ports in late 1943. Three of them fell foul of the increasingly tenacious grip of U.S. air power in the Atlantic. *U-848* (Rollman) sailing south, 300 miles southwest of Ascension Island on the 5 November 1943 was attacked by Liberators of the U.S. Navy. An airfield had been established on the island in 1942 but aggressive patrolling had only begun in October 1943. In the late afternoon a Liberator pressed home its attack and *U-848* sank, leaving 20 survivors in the water; one of them was taken from a life-raft, emaciated and enfeebled by his experience one month later. *U-849* (Schultze) was attacked by two Liberators from Ascension, 600 miles east by north of the island on the morning of 25 November. One bomb bounced and damaged an aircraft but the others sent the submarine down in a final explosion. On the 20 December aircraft from the U.S. *Bogue*, an escort carrier, approached *U-850* (Ewerth). One Avenger drew fire from the flak gunners whilst four others delivered an attack with 500 lb bombs. The boat sank without leaving any survivors. 610 miles south west of Foujal in the Azores. The one *U*-boat to reach Penang was *U-510* (Eick), described by Doenitz as

*See Appendix IV for details of Allied Submarines.

"the most successful Type IXC". Of 1,120 tons and 13,000 miles range, *U-510* sank five ships in the Indian Ocean, enroute to Penang and tied up at Swettenham Pier in April 1944. Voyaging south to Batavia, she loaded war cargo and left for Europe. Engine trouble drove her back and she waited from November until 6 January 1945 before making a second attempt to leave the Far East. On the 24 April she surrendered in the Atlantic through shortage of fuel and was directed to Saint Nazaire, subsequently being fitted with snorkel and taken into the French Navy.

CHAPTER III

THE ISLAND BASE

Penang was far from an ideal base. The Japanese Island Commander was an Admiral Uzuki and although he could be counted upon to be sympathetic in the way a Nippon Army Garrison Commander could not, there were simply not enough facilities to go round. Penang had never been a naval base and neither trained labour nor dockyards were available. There is a limit to achievement by press-on, make-do and bodge methods and incoming German submarine crews, assisted by about fifty German shore personnel, would often undertake repairs and maintenance immediately after an exhausting war-patrol. Only simple metal working and carpentering was left to local labour, chiefly out of concern for sabotage.

A U-boat arriving from Europe took over fifty days to prepare for sea, following a timetable :

- 3 days for cleaning
- 20 days urgent maintenance
- 3 days to Singapore for docking
- 14 days for cleaning and maintenance of skin plating
- 14 days replenishing with fuel-oil, provisions, ammunition, crew recreation, making trial runs and carrying out diving tests.

Apart from leave camps in Java, German crews were allowed a free run of Penang Hill, Frasers Hill and Cameron Highlands. Opportunities to swim, shoot, fish, play tennis and golf were provided and hospitality and convalescent quarters were generous.

Ample rations, despite shortages, were issued and vegetable gardeners were encouraged to plant potatoes and cabbages. Bread was sometimes taken on board in pure tin containers which could be flattened after use and augment the contraband cargo. Young Nordic mariners might have proved an embarrassment to the philosophy of Greater East Asia Co-Prosperity, nonetheless crews wandered about ashore in Penang in a way denied most Japanese military personnel. Some clashes between shore authorities and seamen, especially without a common language, were inescapable, but friction was on the whole kept to a minimum. The nucleus Imperial Airways base at Glugor was made over to the Germans who maintained two Arado 196 single engined float planes (taken from an armed German auxiliary) and a Reichiki Japanese flying-boat, bargained from the Japanese by Korvettenkapitan Wilhelm Domes in exchange for an IXD2 "Bachstelze". The latter was a kite which could be flown from a submarine with a crew member as a look-out. A U-boat's horizon was then extended and increased the possibility of intercepting Allied shipping. It was found however that a surprise air-attack might leave a submarine commander with the unhappy alternatives of cutting loose the "Bachstelze" or delaying diving until it was reeled in.

The radio station in Penang maintained contact with Admiral Wenneker in Tokyo and depending on meteorological conditions, could reach the Bureau de U-boats in Furneval, France. At sea, U-boats maintained radio contact with Penang or France and these frequently long-range transmissions gave the Admiralty a fairly clear idea of submarine movements and often led to hostile receptions. The striking success of the U.S. escort carrier groups in the Atlantic was largely due to excellent weapons, flexible tactics, and shrewd intelligence work based on the U-boat commander's habit of keeping their headquarters informed of their whereabouts. In addition, the difficulties of conning-tower navigation necessitated U-boats signalling homing transmissions when arranging a rendezvous. These signals were often picked up by the Allies high-frequency direction finders and hunting groups despatched to disrupt the ocean meeting.

As 1944 supplanted 1943 on the calendar, there were three main difficulties that impeded the free use of Penang as an Axis submarine base. The greatest threat was the increasing anti-submarine potential of the Allies. Air patrols ran the length of the Atlantic Ocean and submarine interceptions and sinkings, which were already formidable, were to increase even further. In addition, two flotillas of submarines were based on Trincomalee and stepping up operations in Western Malayan waters. More escorts with modern weapons and experience of working together accompanied the merchantmen on the trans-Indian Ocean routes and these convoys did not provide the easy pickings of earlier years. The second difficulty concerned manpower and material shortages, "lube oil . . . Propellers, shafts, electrical equipment, torpedoes, pumps and diesel parts, all had to come from Germany via incoming U-boats"* Two makeshift workshops at Swettenham Pier could not cope with the demands made of them for the sophisticated equipment needed in a modern submarine, spendings months at sea in a taxing climate. Finally, a base handling submarines needs constant air reconnaissance and methodical patrols by anti-submarine vessels. The Germans had three aircraft and no surface vessels whilst the Japanese did not—or could not—organise a satisfactory air/sea survey of the approaches. Two Japanese and two German submarines were sunk as a result of this neglect.

Even with air and surface escorts, a determined submarine commander could attack successfully, as Commander Bennington proved in *Tally-Ho*. The first sinking in 1944 off Penang was set in motion when *Tally-Ho* sighted the Japanese light cruiser *Kuma* exercising with a destroyer on the 9 January. Two days later at 0900 hours *Kuma* was again sighted, accompanied by a destroyer escort and aircraft, this time *Tally-Ho* was in a favourable position to attack and two, of seven torpedoes fired, hit and sank the 5,700 ton cruiser. *Tally-Ho* evaded the destroyer's eighteen depth charge attack by going in-shore, subsequently escaping whilst the destroyer picked up survivors.

* Saville, A.W., *ibid*.

At 1100 hours on the 16 January, the *I-165* sank the unescorted *Perseus* (10,000 tons), with three torpedoes 200 miles north of Trincomalee; no lives were lost and the crew were rescued by 5 p.m. the same day. *I-165* was one of the submarines that had sighted the *Prince of Wales* and *Repulse*; in January 1943 she shelled Port Gregory on the West Coast of Australia and from September until July 1944 was operational in the Indian Ocean. In August 1944 she was suddenly rushed to the Pacific and on the 27 June 1945 was sunk by U.S. land-based aircraft.

Trincomalee-based submarines scored another success off Penang against a Japanese light cruiser, when *Templar* severely damaged *Kitagami*, in a torpedo attack the 5,760 ton cruiser was fortunate to survive.

In Penang itself, *U-168*, *U-188* and *U-532* were taking aboard cargoes and preparing for the long voyage home. By the 7 February all three had set out. *U-532* was sighted in company with *Charlotte Schliemann*, 950 miles east by south of Mauritius, by a Catalina aircraft acting on information supplied by shore radio stations. The destroyer *Relentless* hurried to the spot and sank the tanker whilst *U-532* was given emergency supplies of fuel by *U-178*. *U-532* joined *U-168* and *U-188* at a fuelling rendezvous with *Brake*, on the 11 March, one thousand miles south east of Mauritius. But radio traffic had again led Eastern Fleet Headquarters to suspect the possibility of this meeting and an escort carrier, two cruisers and two destroyers were despatched to break it up. *Brake* was sunk and eighty survivors were taken aboard *U-168*, which had not refuelled. There was no alternative but to set course eastwards. With dents from an unexploded bomb as a hateful reminder, *U-168* set course for Tanjong Priok and with diesels coughing over the last few gallons of fuel, she just reached Batavia. On the 4 October she sortied out but soon after dawn two days later, she was sighted on the surface going east at 14 kts by the Dutch submarine *Zwaardvisch*.* Six torpedoes were fired

*See Appendix IV for details of Allied Submarines.

— three hit —one exploded. Four officers who made an escape from the sunken U-boat, Captain Pich, the torpedo officer, the engineer, the medical officer and a wounded rating were among the twenty-seven survivors taken aboard *Zwaardvisch*.

U-188 had raided moderately successfully off Socotra and the Arabian Coast, sinking four British, one Greek, one Chinese and a Norwegian vessel along with seven Arabian dhows before sailing south to meet *Brake*. Fortunately, *U-188* had refuelled before the tanker was sunk and was able to sail on into the Atlantic. Ordered to give fuel to *U-66*, she was near enough to hear that U-boat depth-charged and sunk 400 miles west of Cape Verdes, but herself went on to reach Bordeaux safely on the 19 June 1944. Without batteries, she was blown up two months later on the approach of U.S. armoured forces.

U-532 had taken aboard fuel and provisions before *Brake* was sunk and was able to pass some on to *U It-24* in its abortive attempt to reach Europe. Battery trouble forced *U It-24* back to Penang and *U-532* next rendezvoused with *U-1062*, fuel was pumped aboard and the two U-boats sailed in company to tie up at Penang on the 19 April, 1944. Later *U-532* went to Kobe with battery troubles and left Batavia on 13 January with a cargo of tin, quinine, wolfram and rubber, bound for Europe. Five hundred miles northwest of Cape Town, she sank *Point Pleasant Park* (7,316 tons) by torpedo and gunfire and a month later, on 28 March, sank *Oklahoma* (9,298 tons) in mid-Atlantic. On the 7 May 1945 she surrendered and was directed to make for Liverpool, (a photograph of her in Gladstone Dock faces P. 302 of vol. III, part 2 of "The War at Sea".)

In January, eight merchant ships of 56,213 tons were lost to Axis submarines in the Indian Ocean; ten ships of 64,169 tons were sunk in February but against this, the loss of four submarines and the invaluable tanker *Charlotte Schliemann* strike a wry balance. The sinking of *U It-23* by *Tally-Ho* has been described and we must go back to the 6 February to trace the loss of the other three submarines. Intensive anti-submarine patrolling by land-based and

escort carrier aircraft had led Doenitz to decide future U-boat sailings should be made singly. Wolf-pack concentrations were desirable but too expensive and elusive invisibility was called for rather than group aggression. U-177 (now commanded by Korvettenkapitan Bucholz) a veteran of two sorties into South African waters, was found travelling on the surface 480 miles west south west of Ascension by an island-based Liberator bomber and was destroyed leaving no survivors.

Meanwhile, in the Indian Ocean the increasing number of escorts showed the likely outcome of aggression against convoys. RO-110 was a small, 525 ton submarine, captained by Lieutenant-Commander K. Elato. On the 11 February 1944 off Vizagapatam at 08.30 hours, she fired two torpedoes into the *Asphalion* (6,273 tons) a Blue Funnel liner in an eight vessel convoy sailing from Colombo to Calcutta. The escorts turned away from the convoy and made a series of depth-charge attacks on promising asdic contacts. They were rewarded by satisfying underwater detonations along with quantities of air and debris that marked a spreading pool of oil. Again, there were no survivors. *Asphalion* survived the torpedoing and after repairs in Colombo, sailed back to Britain.

I-27 (Lieutenant Commander T. Fukumara) was yet another of the large modern ocean-going submarines that could be fitted to carry a midget submarine. In May 1942 she had launched her midget seven miles east of Sydney when accompanied by other boats of the 8th Submarine Squadron, in an abortive attempt to sink shipping anchored in the harbour. All the midgets were lost; one in the harbour nets, one by gunfire from the U.S. cruiser *Chicago*, one was sunk by the harbour patrol and the other blew up when a torpedo exploded in the torpedo tube. From September until December 1943, I-27 was operational in the Arabian Sea and on the 4 February 1944 she left Penang to reconnoitre Addu Atoll and raid Aden Bay. Out of a troop convoy on passage from Kilindini Harbour (Mombasa, Kenya), to Colombo she torpedoed the *Khedive Ismail*, a troopship carrying 1,947 military and members of the women's services with a loss of 1,055 lives, but

on the 12 February, between the Maldivé Islands and Addu Atoll, she was sunk by the two escorts *Paladin* and *Petard*. *I-52* (Commander K. Uno) set out from Penang in early March, bound for Germany with war cargo; her history and fate will be taken up for the month of June.

An interesting departure from Penang in late February was that of *I-26*. She carried a party of 22 Indians, ostensibly members of the Indian National Army who had been in training since the fall of Singapore at the Sandicraft School, Penang and who were now to be landed in India as agents of the Japanese. Supplied with ingenious transmitters secreted in hubble-bubbles, three parties of four men were to spread themselves not more than 500 miles apart (the range of the wireless) in positions on the North West Frontier, United Provinces and Bengal. From this last link information was to be transmitted to Japanese listening posts behind their lines in Burma. The Indian Muslims were appalled to find they were served with pork and did not care for sweetened dishes. They were fortunate to enjoy the meals they did as *I-26* was undoubtedly the ocean-going submarine sighted by *Storm* (Lieutenant Commander E. Young).* A sweep three hundred miles south of Ceylon skirted that island and after actions in which two merchantmen were sunk and their crews taken under fire, an attempt was made to put the agents ashore off Pasni (now in West Pakistan) on 20 March. The attempt failed and another landing on 27 March 1944 was more successful. Unfortunately for the Japanese the twenty-two men had no hesitation in giving themselves up to the British authorities for they had been thoroughly subverted by Captain Mahmood Khan Durrani. This courageous officer had been responsible for training agents and the failure of the mission led to his near death at the hands of the Kempetai. He was in prison but alive when the Allies re-occupied Malaya and was later awarded the George Cross for his gallantry. *I-26* was subsequently withdrawn to the western Pacific and lost there through unknown causes in October the same year.

*An exciting approach without reaching a suitable firing position is described in chapter XIV of Commander Young's book "One of our submarines".

An earlier party of saboteurs left Penang by submarine in December 1943 under S.N. Chopra, a schoolmaster from Batu Pahat. They were landed on the Kathiawar Coast between Bombay and Karachi on the 22 December, and were fruitlessly at large for two months before being taken into custody by the British authorities.

South-east of Ceylon on her fourth war cruise, *U-183* torpedoed and sank *Fort Macleod* (7,127 tons) on the 3 March and six days later torpedoed *British Loyalty* anchored in Addu Atoll. The tanker was equal to the distinction of being twice torpedoed by both Japanese and German submarines whilst in harbour; the damage was repaired and the vessel made sea-worthy within a few months. *U-183* commanded by Korvettenkapitan Schneewind after her first captain (Schaefer) died of a heart attack in Penang, was later torpedoed and sunk in the Java Sea by the U.S. submarine *Besugo* on the 23 April 1945. The navigator, who was on the bridge when the submarine was hit, was the only survivor. (Morison says "Germans . . . were disguising themselves as Japanese . . . (*U-183*) . . . had a Japanese emblem and flew a huge Rising Sun flag".* The most likely explanation is identification rather than disguise, Japanese airmen could not be counted upon to be fully familiar with U-boat silhouettes)

March 1944 also involved the Allies in the loss of a submarine. *Stonehenge* (Lieutenant D.S. Verschoyle-Campbell) was on patrol off Subang and transmitted news of a successful attack on the 1,000 ton Japanese auxiliary *Choku Maru*. On the 20 March she failed to report to Trincomalee and no further signals were received from the boat. No Japanese claim was made concerning her loss and it is unlikely now that the circumstances under which she was sunk will ever be known.

An equally inexplicable disappearance on the German side during the month of March, was that of *U-851* (Weingartner). The U-boat left Norway and radioed her position from mid-Atlantic,

*Morison. S.E., *History of U.S. Naval operations in World War II*, Vol. X.

south of Iceland in late March. She was never heard again and no report of attacks or claims for sinking were made by the Allies in the area at that time. A more positive claim exists for the sinking of *U-1059* enroute to Penang with a vital cargo of torpedoes. Avenger aircraft flying from the U.S. escort carrier *Block Island* sighted the U-boat west of Cape Verdes with some of her crew swimming overside at 0726 on the morning of the 19 March 1944. All save one managed to bolt down the conning-tower before the first aircraft machine-gunned the diving submarine. The next Avenger to attack dropped two depth bombs from a very low level and crashed in the subsequent explosion. Korvettenkapitan Leupold and six of the crew were rescued along with one of the crew of the Avenger.

The torpedo situation in Penang was becoming increasingly difficult for the Germans. Unfortunately U-boats could not fire the superior Japanese 24 *long-lance* weapon which could carry 1,000 lbs. of explosive 11 miles at 49 knots or 22 miles at 36 knots and exceeded the performance of any other torpedo in the world. Owing to the deterioration of batteries, German torpedoes frequently ran slow and were held partially responsible for the low number of sinkings in the Indian Ocean. With a cargo of thirty-nine torpedoes on board, *U-1062* (Albrecht) was despatched from the bitterly cold U-boat pens at Bergen on the 3 January and set out for Penang. She fell in with *U-532*, frustrated in her attempt to reach Europe, and after coupling up fuel hoses and pumping over much-needed diesel fuel, the two boats sailed in company to reach Penang on the 19 April. Korvettenkapitan Albrecht took his submarine, now laden with rubber, tin and wolfram, away to Europe in August. 600 miles west south west of Fogo in the Cape Verdes Islands on 30 September, *U-1062* was approaching a refuelling rendezvous with another outward bound U-boat. Allied intelligence suspected the likelihood of a meeting as they had eavesdropped on the exchange of signals and aircraft from the U.S. *Mission Bay* were carrying out a sonobuoy search. Destroyer escort *Fessenden* dropped hedgehogs and depthcharges on a promising contact and

was rewarded by spreading oil and emerging flotsam testifying to the accuracy of the attack; *U-1062* was lost with all hands.

Two other U-boats made for the East in the first quarter of 1944. From Kiel on the 18 January, 1944 *U-852* (a new Type *IXD2*) commanded by Kapitänleutnant Eck set course on a voyage that was to result in the only trial on an atrocity charge, brought against a German submarine commander in World War II. Eck sank the *Peleus*, a Greek freighter of 4,695 tons on the night of 13 March, 700 miles west of Freetown. Survivors were machine-gunned and run down by the U-boat before it made off. Incredibly, three members of the crew survived a thirty-five day ordeal in the water and gave evidence which later led to Eck and two officers being executed before a firing squad, whilst other crew members received long terms of imprisonment. Survivors of another merchantman sunk by *U-852* ten miles from the South African shore were not molested and the submarine rounded the Cape setting course for the Gulf of Aden. Her signals to U-boat Headquarters in France were detected and her northward movement charted along the east coast of Africa. Off Somaliland she was found on the surface by an R.A.F. Wellington bomber on 2 May and six well-placed depth charges caught her in the process of diving. Bursting back on to the surface three minutes later she kept aircraft at bay until she was beached and scuttled on the coast, near Ras Hafun. The entire crew were captured and interned by a party of the Somaliland Camel Corps.

U-843 (Herwartz) left Europe in February and along with *U-1062* was the only boat to reach Penang. She sank *Nebraska* (8,262 tons) south west of Ascension and went on to tie up at Swettenham Pier in May. In December she was the last U-boat to leave Penang and from Batavia in January, with the help of fuel from *U-195*, she made her way to Europe and berthed at Bergen safely on the 2 April, 1945. She was then ordered to make for Kiel as the Norwegian Quisling government was about to collapse. On the 9 April 1945 she was found on the surface in

the Kattegat by a Strike Wing of Mosquitoes of 18 Group R.A.F., and sank with all hands as a result of strafing with rockets and cannon. The pathetic futility that marked so many of the voyages of the German U-boats to the Far East can nowhere be more poignantly illustrated than in the torn hull of *U-843*, sinking into the dark waters east of the Skaw on the very doorstep of her homeland; victim of the Allied re-occupation of Europe and Germany's inability to care for those who served her.

CHAPTER IV

THE "TRADE" AND THE LAW OF DIMINISHING RETURNS

In March four U-boats left European ports for the Far East, their destination Batavia and not Penang. Making a third voyage into the South Atlantic was *U-181* on what had become an annual event. Her two previous voyages had been made under the command of Fregattenkapitan Luth, who had been awarded diamonds to his Knights Cross after the 1943 voyage which lasted 198 days and was the longest war patrol made by any submarine. In 1944 she was commanded by Fregattenkapitan Freiwald and won from Doenitz the praise "the most successful of the big *IXD2's*". Nine hundred miles south by west of Ascension, *U-181* sank the British merchantman *Janeta* (5,312 tons) on the 1 May and prowled the waters around the Cape of Good Hope before crossing the Indian Ocean and reaching Batavia. On the 19 October she left port and torpedoed and sank the U.S. *Fort Lee* (10,000 tons) east of Mauritius on the 2 November. A refuelling rendezvous for the same day with the outward bound *U-219* was missed and from a position south east of Cape Town, *U-181*, experiencing bearing trouble made her way back to reach Batavia on the 5 January 1945. After Germany's defeat *U-181* became *I-501* of the Imperial Japanese Navy but was never used operationally. She was finally scrapped by the British in 1946 in Singapore. *U-196* (Korvettenkapitan Kentrat) left in March also and was another *U-boat* directed to Batavia rather than Penang. Her captain left her in Batavia to take charge of battery renewal facilities set up for *U-boats* in the Far East at Kobe, Japan. Korvettenkapitan Streigler, who had survived the sinking of *U It-23* in the Straits of Malacca, took command and on the

11 November *U-196* left Tanjong Priok for Europe. On the 30 November when in the vicinity of Sunda Straits all communication ceased. Although lost from causes unknown, it is at least possible she was sunk by a mine laid by H.M. Submarine *Porpoise*, which had been active along routes known to be used by the enemy. *U-198* (Oberleutenant Zur See Neusinger Von Waldegg) like *U-196* and *U-181* was a Type *IXD2*. A leisurely but evasive passage through the Atlantic ended in an attack by S.A.A.F. Ventura bombers 200 miles east of Durban on 6 July 1944. One of the aircraft was struck by anti-aircraft fire but another Ventura set down six depth charges which shook the U-boat and holed one of her fuel tanks. When the submarine was seen to disappear and oil spread in her wake, aircrews optimistically claimed one U-boat sunk. The fallacy was suspected when shore stations detected U-boat wireless transmissions from the area in the evening, and confirmed on the 5 and 7 August when *U-198* sank the British merchantmen *Empire City* and *Empire Day* both of 7,300 tons. By this time, the Indian Ocean Command had vessels on hand to cope with just such an emergency and in co-operation with air patrols flown from shore stations, an intensive hunt was instituted. Avengers flying from the American-built escort carriers H.M.S. *Begun* and *Shah* detected the north bound U-boat on the 10 and 11 August. Later, on the 11, a Catalina made contact and summoned the Royal Indian Navy sloop *Godavari* and H.M. frigate *Findhorn*. After a hunt which lasted into the morning of the 12 August, *Godavari* made and held Asdic contact whilst the frigate, using a technique evolved in the North Atlantic, crept in and dropped "hedgehogs". Under-water explosions sent up volumes of diesel oil but no survivors.

U-537 (Kapitanleutenant Schrewe) was a Type *IXC 40*, smaller and without the range of the Type *IXD2*'s. From Lorient she rendezvoused with *U-488*, 700 miles west of Cape Verdes and made an uneventful passage to Batavia, mooring at Tanjong Priok on the 2 August. Off Bali on the 9 November, she was sighted by U.S. Submarine *Flounder* and struck by some at least, of the four torpedoes fired. There were no survivors.

U-860 (Korvettenkapitan Beuchel) made an April departure from Europe and when attacked by Avengers from the U.S. escort carrier *Solomons* stayed on the surface to fight it out. One Avenger was shot down and another crashed in the explosion of its own bombs, but finally an intrepid attack holed the submarine which sank 570 miles south south east of St. Helena on the 15 June 1944.

Penang and not Batavia was the destination of *U-859* (Korvettenkapitan Jebson) When the Type *IXD2* left Kiel on the 20 May, 1944 on her maiden patrol. A Catalina found the submarine on the surface in the early morning light of 5 July, some 270 miles east-south-east of Durban. More successfully than *U-860*, *U-859* fought back and damaged the aircraft which nonetheless dropped five depth charges, puncturing a fuel tank. Leaving a faint trail of oil, *U-859* dived and rounded the Cape. On the August the *John Barry* (7,176 tons) was sunk north of Socotra and in the early hours of 1 September *Troilus* (7,421 tons) was struck by three torpedoes. The Blue Funnel liner laden with coconut oil, tea and copra had a crew of eighty-three and eighteen passengers. Six persons were lost in the sinking but the remainder were taken out of five lifeboats three days later by R.N. frigates.

U-859 was directed on to Penang on the 16 September and at mid-day on the 23rd she was surfaced and awaiting a rendezvous with Japanese escort vessels just off the island. The Japanese authorities had warned Korvettenkapitan Jebson that British submarines were known to be in the area but look-outs failed to detect the approach of H.M. submarine *Trenchant*, which closed and sank *U-859* with a torpedo astern of the conning-tower. *Trenchant* surfaced and took aboard eleven survivors, some of whom made a remarkable and rare escape from the sunken hulk. Other survivors were seen in the water clinging to wreckage but they had to be left owing to the approach of Japanese escort vessels and aircraft.

It was perhaps lucky that *U-861* arrived off Penang on the 22 September, one day before *U-859*. Under Korvettenkapitan Oesten, she was one of the few boats to make the round trip

unscathed. Departing from Kiel in April she sank the *Berwickshire* (7,464 tons) 400 miles east south east of Durban on the night of the 20 August and from the same convoy, torpedoed but failed to sink the tanker *Daronia* (8,139 tons). On rounding the Cape, *U-861* moved northwards and sank *Fafalios* (5,670 tons) off Zanzibar on the 5 September, she then made her way to Penang. Later *U-861* sailed south to Batavia and after one or two false starts, she cleared Tanjung Priok on the 14 January and without snorkel made the perilous voyage safely through the North Atlantic to tie up at Trondheim on the 18 April.

I-52 (Commander K. Uno) left Penang in early March on the last East/West voyage of a Japanese submarine, and on the 23 June 1944 was 850 miles west of Cape Verdes approaching a rendezvous with *U-530*, from whom *I-52* was to take aboard a pilot for the dangerous last leg into the Bay of Biscay and Bordeaux. Avengers flying from the U.S. escort carrier *Bogue* detected the blockade runner and made a bombing attack after setting down a sono-buoy pattern. Little damage was done, but a follow up hunt was successful when sono-buoy guidance led an Avenger to the submarine at 0054 on the 24 June. Escorts arrived later to find human remains, a Japanese sandal and sixty-five bales of crude rubber marking a watery scene without survivors.

The last operational U-boat to leave Europe and gain Penang was *U-862* (Kapitanleutenant Timm). A fast and successful trip began when she cast off from her European base on the 8 June 1944, she later made her presence felt by sinking three merchantmen and an ammunition ship in six days in the Mozambique Channel. Between the 13/19 August, *U-862* sank *Radbury* (3,614 tons), *Empire Lancer* (7,000 tons), *Nairung* (5,414 tons) and *Wayfarer* (5,000 tons); an attacking Catalina was shot down off the Comoro Islands on the 20 August and *U-862* then went on to join the other U-boats in Penang on the 9 September. *U-862* later moved south to Batavia and sailed on a war patrol off West Australia between November 1944 and February 1945, in which two Allied vessels were sunk. *Peter Sylvester* a troopship bound

from Melbourne to Colombo, torpedoed on the 6 February 700 miles west of Perth, was the last Allied ship to be sunk by enemy submarines in the Indian Ocean and also the last success by a German U-boat in the Far East. Taken over by the Japanese on Germany's surrender, she became *I-502* but was never used operationally and was found tied up alongside the Japanese cruiser *Myoko* in Singapore by the Royal Navy, in September 1945. Subsequently she was scrapped.

The waters around Penang and those in the Malacca Straits continued to be the scene for submerged ambush, mostly mounted by H.M. submarines against Japanese coastal traffic, using junks, lighters, tumpats and barges. Paradoxically, the British who drove away Malay pirates 150 years previously, flew the skull and crossbones from their periscope superstructure, proclaiming their successes when entering Trincomalee on the completion of their patrols. Hardly worth a torpedo, most of the Japanese vessels were sunk by gunfire which not only gave the impressed Malayan crew a chance to escape but also provided prisoners for interrogation.

The interdiction of the sea-route from Singapore northwards was successful. Convoys were instituted but those to North Sumatra and Penang through the Malacca Straits were abandoned in October 1944 and by January 1945, the Singapore-Rangoon route was closed. The latter came at a time when supplies were urgently needed in Burma to counter the growing offensive of the 14th Army.

In the absence of major Japanese fleet or merchant units, Axis submarines were the primary target and between January 1944 and January 1945, twenty-one attacks were made by submarines of the Royal Navy. Three were successful, against *U 11-23*, *U-859* and *I-166*. The sinking of the latter has been fully described by the submarine commander responsible, Lt-Commander W. King D.S.O.* After a night on the surface re-charging batteries, H.M. submarine *Telemachus* had barely submerged just before dawn on

*King, C., *The Stick and the Stars*.

the 17 July 1944, when an ocean-going Japanese submarine was sighted steering south-wards towards One Fathom Bank. The *I-166* captained by Lieutenant-Commander Suwa, enroute from Penang to Singapore for training and repairs was travelling at high speed on the surface on a course of 144° and predictable because of the narrowness of the channel. A spread of six torpedoes was fired by *Telemachus* and the *I-166* blew-up. Commander King decided not to stay and search for survivors as the explosion was undoubtedly noticed in the nearby One Fathom Bank lighthouse and assistance would probably be forthcoming.

H.M. submarine *Stratagem* was less fortunate in an encounter with Japanese forces. A destroyer detected *Stratagem* (Lieutenant C.R. Pelly) off Malacca on the morning of 22 November 1944 and in the attack which followed, the submarine was depth charged and sunk. Eight survivors were finally taken from the water (others were allowed to drown) and taken off for interrogation and internment in prisoner of war camps.

Unhappily, *Stratagem* was not the last British submarine to be lost in Malayan waters. *Porpoise*, laid 465 mines in her war-time career in Norwegian and Mediterranean as well as Far Eastern seas. She had carried supplies from Alexandria to Malta, and Commandos from Australia to attack shipping in Singapore. Captained by Lieutenant-Commander G.H.B. Turner, she laid mines off Penang on the 9 January 1945 and somewhere to the south, became overdue on the 16 January. No Japanese claim was ever made for her sinking and the cause of her loss is unknown.

Although no more operational U-boats were to reach the Indian Ocean, nine boats were despatched of which two cargo-carriers got through. Unsuccessful was *U-490* (Oberleutenant Gerlach) a Type *XIV* which was designed for replenishing operational submarines at sea. Her main cargo was 432 tons of oil fuel, badly needed by U-boats making the long Far Eastern voyage, especially near the Cape of Good Hope now that both *Brake* and *Charlotte Schliemann* had been sunk. *U-490* left Christiansund on

the 6 May 1944 but was detected by the destroyer escorts *Frost* and *Huse* at 0600 on 11 June. The destroyer escorts were accompanying the U.S. escort carrier *Creatan*, midway between Newfoundland and the Azores. *U-490* went deep in an attempt to throw off her attackers and the destroyer escorts pretended to withdraw to lull the U-boat commander into surfacing. Eventually he did. At 2147, *U-490* came up 8,000 yards from the *Frost* and *Snowden*, another destroyer escort. Star shell illuminants were fired and the escorts closed the surfaced U-boat taking her under rapid gunfire. At 2253, the U-boat's engineers opened scuttling valves and she sank stern first; the whole crew of 60 were taken from the water.

Two Type *IXDI* ocean going cargo carriers were made ready in Bordeaux in August 1944 for a voyage to the Far East. *U-195* (Steinfeld) had had an exceptionally fine operational record in the Caribbean under Werner Witte who later lost his life in *U-509*. Originally fitted with six E-boat engines in order to obtain a high surface speed, logs had become a catalogue of engine defects and diesel engines of less power but greater reliability had been installed. On the 20 August *U-195* left Bordeaux for Japan with a cargo of optical instruments, mercury, dismantled V-weapons, torpedoes — with details of construction, radar sets and technical personnel.* Directed to Batavia, she arrived in December where her cargo (250 tons) was transhipped for onward despatch to Japan. The new diesels were not entirely trustworthy for a start was made from Tanjong Priok on the 17 January but engine trouble forced her back on 3 March, with no achievement beyond passing fuel on to *U-532*, homeward bound. After Germany's surrender, *U-195* was renumbered *I-506* but never used operationally by the Japanese.

U-180 (Riesen) once the personal transport of Subhas Chandra Bose and therefore no stranger to the Indian Ocean, also cleared Bordeaux on the 20 August with a similar cargo. Barely two days later she was sunk on a mine laid by the R.A.F.

*Commander Eiichi Iwaya brought technical information about German jet aircraft, a Japanese prototype flew in August 1945.

Another cargo-carrier, of the Type *XB*, also cleared Bordeaux on the 20 August in an attempt to escape before the victorious Allied armies invested the port. *U-219* was designed as a minelayer but adapted as a transport. Found on the surface by an Avenger flown from a U.S. escort carrier on the 28 September she managed to shoot the aircraft down and avoid the sono-buoy attacks mounted by subsequent air patrols. On the 2 November a refuelling rendezvous with *U-181* was missed and on the 12 November she tied up at Batavia. Redesignated *I-505*, her crew were interned when Germany surrendered and the vessel scrapped by the Allies in 1946.

Three patrol boats which left Europe for the East were sunk by Allied aircraft. *U-863* (Von der Esch) cleared Trondheim on the 26 July 1944 and after steering west into the Atlantic, began the run south, 750 miles south south east of Ascension, on the 29 September the Type *IXD2* was sighted and sunk by U.S. Liberator bombers flying from Ascension Island. *U-871* (Ganza) another Type *IXD2* left Trondheim on the 31 August 1944. R.A.F. aircraft of 220 Squadron found her "schnorkeling" northwest of the Azores on the 26 September and from their depth charging there were no survivors. *U-867* (Von Muehlendahl) was a Type *IXC* that sortied from Trondheim but soon experienced a major engine breakdown. Her wireless requests for assistance were intercepted on the 17 September and on the 19th. R.A.F. Liberators of 224 Squadron depth charged her north east of the Shetlands, forcing Von Muehlendahl to order the vents and hatches to be opened, the ballast tanks flooded and the boat scuttled.

U-957 was lost in collision with a German transport in West Fjord (Norway) on the 19 October. Her crew were paid-off in Narvik and taken aboard *U-1060* which left Trondheim on 25 October 1944. With a minesweeper escort *U-1060* (Ober Lieutenant Brammer), a Type *VII* cargo-carrier set course to the south but two days after leaving harbour was found on the surface off Vega Fjord by aircraft of H.M.S. *Implacable*. The escort was sunk and the submarine driven ashore to be bombed and rocketed to destruction by R.A.F. aircraft on the 30 October.

Only one more U-boat attempted the passage to the East. *U-234* (Fehler) a Type *XB* cargo-carrier set out for Tokyo but surrendered and entered Portsmouth, New Hampshire, when news was received of Germany's defeat. Aboard were two Japanese, Commander-Instructors Hideo Tomonaga and M. Shoji, a leading ship constructor and aircraft-designer respectively. They were to have been transferred to a Japanese submarine in the Indian Ocean but when the *U-234* headed for the United States harbour, they drank suicidal doses of luminal. *U-234* was used by the U.S. Navy as an experimental vessel and finally sunk off Cape Cod in November 1946.

CHAPTER V

THE SUBJUGATION OF PENANG

In late 1944, although the Axis were finding Penang increasingly insecure, it was still a major concern to the Allies. Until October it was a key point in the sea supply and fuel transport system that ran north from Singapore to feed the Japanese armies in Burma. Its distance from Allied airfields had kept it free from air-raids although intensified sinkings by Trincomalee submarines interrupted its normal commercial flow. A thorough-going mining of the North and South Approaches was a practical proposition and submarines had had encouraging success when the *Kusumi Maru* sank on one of the mines laid by *Taurus* in April 1944. A programme of submarine mine-laying in the South Channel, in water ranging between 6 — 8 fathoms deep had been kept up after April and resulted in the South Channel being closed by the Japanese.

1944 had not been a successful one for Axis submarines in the Indian Ocean. In the monsoon months of April and May, no Allied merchantmen had been sunk. A total of 47 ships of just over 300,000 tons had been sunk up till the end of September and despite the increasing areas of ocean under air-patrols and the greater number of escorts with the convoys, these figures can hardly have satisfied naval authorities in Penang. The chances of increasing the tonnage sunk became remoter as the Japanese submarines were withdrawn, to fight in the Pacific against the crushing onslaught of General MacArthur's and Admiral Nimitze superbly equipped forces. By the end of 1944 all the submarines, both German and Japanese had withdrawn from Penang. The reason for their departure had begun as a proposal by the Strategic Air Force to lay

mines by Liberator bombers flying from an airfield at Kharagpur, a well-equipped base built for the use of XX Bomber Command Superfortresses. The night chosen for the attack coincided (one wonders if it was by design) with an important historical event in the annals of Penang. The date set, 28 October 1944, was the thirtieth anniversary of the raid of the German Cruiser *Emden*.

At dawn on the 28 October 1914, the *Emden* commanded by Captain Von Muller made her way through the Northern Channel disguised as the British cruiser *Yarmouth* by the addition of a fourth, dummy funnel. Since September the 10th, she had sunk twenty Allied vessels and bombarded oil storage tanks at Madras. In the faint and deceptive light, the *Emden* slipped through the water until she was abreast of the Russian light cruiser, *Zhemtchug*; in response to a challenge she fired torpedoes and followed up with rapid gunfire from her 12-4 inch guns. *Zhemtchug*, blew up whilst at anchor and then slowly sank, the hulk belching black clouds of smoke until only the tip of her mainmast, a litter of shattered wreckage and the survivors of her complement of 356 men, marked her resting place. The *Emden* fired a few more salvos and increasing speed made off back into the Northern Channel. A French torpedo-boat destroyer, the *Mousquett* made a gallant attempt to intercept the raider but was sunk after a brief gunnery exchange. Her survivors were landed by the *Emden* at Subang. Lest it be thought the success of the raider might have suggested a similar raid by the Royal Navy in World War II, it is salutary to add that *Emden* was sunk within a fortnight by the Australian cruiser Sydney at the Cocos Keeling Islands.

On the 25 October 1944, weather reconnaissance aircraft of 159 Squadron Special Flight reported favourable meteorological conditions along the flight route and at the airfield, the Liberator VPs were fuelled and mines stowed. The route the bombers were to follow was carefully worked out as it involved a 3,000 mile flight lasting 18½ hours. Allied submarines and vessels were alerted and communication links with them and other air/sea rescue organisations arranged. The narrow and less negotiable Southern

Channel approach to Penang had been previously mined by submarines and so more emphasis was given to the Northern Channel where the Japanese swept regularly and the water ran as deep as 14 fathoms.

At 1000 hours on the morning of the 27 October 1944 fifteen Liberators laden with 4 U.S. Mark XXVI-1 mines each, heaved themselves airborne and after forming turned south. The time of arrival over the target was calculated to coincide with dusk and the aircraft dropped down to between 300 and 600 feet on making their approach to the island. The drop went off precisely as planned, both the North and South Channels were clearly identified and with minimal interference from the enemy, 60 mines were laid by 159 Squadron. All the aircraft returned safely. Favourable weather conditions had contributed to the success of the operation and this was emphasised when a repeat drop was planned for the night of the 26 November. Sixteen Liberators arrived at the target to find a vicious electrical storm raging inside billowing cumulus cloud that terminated at sea level in scudding rain. Twelve mines were laid from three aircraft which found gaps in the cloud and managed to identify the area. The rest jettisoned their mines and climbing out of the storm, made their way back to their operational base at Kulai Kunda. Tactically the raid had failed but the strategical significance was not lost on those responsible for submarine operations from Penang.

Airpower, free of interference on any deterrent scale opened the maritime war in Malayan waters with the sinking of the *Repulse* and *Prince of Wales*. It was fitting that Allied airpower, to which the Japanese had no effective answer, should reach out over thousands of miles exactly three years later and close Penang as an aggressive base. The mining was not of formidable proportions, although the Japanese were unlikely to know how many mines were laid. It was demonstrably obvious the operation could be repeated and that sweeping facilities were inadequate. A base that cannot be defended must be evacuated. Imperial Navy sub-

marines had already left for the Pacific defence of homeland Japan and so it was *U-843*, leaving on the 1 December 1944, that was the last submarine to slip from Swettenham Pier. Diesels turning, emitting their "whiffs of paraffin", her narrow forecasing thrusting a way for the main ballast tanks, she went slowly out alone past the buoys of the North Channel. To starboard lay Mount Kedah, to port the island of Penang. In the future lay the meeting with R.A.F. Mosquitoes in the Kattegat; astern the colours drained with distance from an island facing eight further months of occupation and in its misery, unaware of the significance of the diminishing low silhouette.

CHAPTER VI

A POST-SCRIPT ON JAPANESE SUBMARINES BASED ON PENANG

Only *I-162*, of the Japanese submarines based on Penang, survived until the end of the war in the East, and she ran aground in South Korea on the 26 June 1945. The following day, 2,000 miles away, south of the Marianas, *I-165* was bombed and sunk by U.S. land-based aircraft. She had been withdrawn in August 1944 from Penang and involved in cargo-carrying duties between Japanese held islands in the Pacific.

I-10, once the flagship of Admiral Ishizaki during the raid in Madagascar waters, left for the Pacific in early 1944. She attempted, but failed, to take off the staff of the Imperial Navy Submarine headquarters on Saipan and was sunk near the Marianas on the 4 July 1944. *I-16* won the unenviable distinction of being sunk on the 19 May 1944 by the U.S. destroyer escort *England*, during its unique victory over six Japanese submarines in twelve days off the Solomon Islands.

I-18, which had failed to release her midgets off Madagascar was another submarine drawn into the vicious sea fighting and frustrating cargo carrying in the Solomons area. On the 11 February 1943 she was attacked and sunk by aircraft from the U.S.S. *Helena*, assisted by the destroyer escort *Fletcher*. *I-20* whose midget submarine scored the only successes in Diego Suarez harbour was

sunk by the U.S. destroyer *Eaton* on the 1 October 1943, again, in the waters of the Solomon Islands.

I-37 carried an aircraft which had flown over East African harbours in 1943. Withdrawn to the Pacific in late 1944, she was sunk north of the Palau Islands by U.S. destroyers in mid-November of the same year.

RO boats fared no better. Of the four based on Penang, *RO 110* was sunk in the Indian Ocean. *RO 111* was sunk north east of the Admiralty Islands by the U.S. destroyer *Taylor* on the 11 June 1944. *RO 113* was caught in a spread of torpedoes fired by the U.S. submarine *Batfish*, north of Luzon on the 13 February 1945. *RO 115* left Singapore on the 22 January 1945 and set course for the Philippines, the last Japanese submarine to operate in Malayan waters. Five U.S. destroyers found her as she neared her destination and sunk her on 31 January.

No Imperial Japanese Navy submarine crews were ever charged with war crimes in the Indian Ocean. The best efforts of the International Military Tribunal, Far East, to establish blame and identify the culprits came to nothing. As no lack of vigour was shown in prosecuting war criminals, the absence of any trial confirms the grim efficiency with which the United States and her Allies eliminated the submarines of the Imperial Japanese Navy.

THE U-BOATS

Type VIII

<i>Displacement:</i>	1,084/1,181 tons
<i>Speed:</i>	17 knots, surface; 8 knots submerged
<i>Range:</i>	9,500 miles
<i>Armament:</i>	1 x 37 mm. A.A., 2 x 20 mm. A.A., 5 x 21" torpedo tubes (14 torpedoes plus 25 torpedoes as cargo).
<i>Complement:</i>	46

Four boats of the type were built. From a mine laying design, an adaption for torpedo-carrying was made. The transfer of bulky torpedoes at sea was dangerous if the weather was rough and even when calm involved many crew-members on deck with hatches open and the vessels stationary. Most voyages were therefore made to replenish bases rather than ships.

Type IXC

<i>Displacement:</i>	1,120/1,232 tons
<i>Speed:</i>	18½ knots, surface; 7½ knots submerged
<i>Range:</i>	11,000 miles
<i>Armament:</i>	1 x 4.1", 1 x 37 mm. A.A., 1 x 20 mm. A.A., 6 x 21" torpedo tubes (22 torpedoes)
<i>Complement:</i>	48

Ocean-going patrol boat, variants of which were some of the most widely used and successful vessels commissioned by the German Navy. RO 501, made over to the Imperial Japanese Navy, was of this type and perhaps ungratefully, described by Admiral S. Fukutome, former Chief of Staff, Combined Fleet, Imperial Japanese Navy as "small . . . and therefore of little value to Japan".

Type IXC40

Similar to the Type IXC but fitted to carry mines and/or spare torpedoes or cargo under the deck casing.

Type IXD1

Displacement: 1,610/1,799 tons
Speed: 15½ knots, surface; 7 knots submerged
Range: 9,900 miles
Armament: 1 x 37 mm. A.A., 2 x 20 mm. A.A.
Complement: 57

Originally designed as tankers with a high surface speed, the two vessels of this type later had their six Motor Torpedo Boat engines replaced by standard U-boat diesel engines and were adapted to carry cargo rather than fuel.

Type IXD2

Displacement: 1,616/1,804 tons
Speed: 19½ knots, surface ; 7 knots submerged
Range: 23,700 miles
Armament: 1 x 4.1", 1 x 37 mm. A.A., 1 x 20 mm. A.A., 6 x 21" torpedo tubes (24 torpedoes)
Complement: 57

A long-range ocean-going patrol boat, designed for offensive operations on distant trade routes. They were the last conventional German submarine to be made operational. Their programme was cancelled as

Walter turbine propelled vessels were put in production. Their size did not make for ease of handling when submerged and this clumsiness was criticised by Kapitanleutenant Dommes. Kapitanleutenant Luth found, "their hydroplanes too small to hold them steady in a heavy sea and periscopes too short". Nonetheless they could undertake raids as far north as the Gulf of Aden when en route to Penang and lessened the loss occasioned by the sinking of *Charlotte Schlieman* and *Brake*.

Type XB

<i>Displacement:</i>	1,763/2,177 tons
<i>Speed:</i>	16½ knots, surface ; 7 knots submerged
<i>Range:</i>	14,550 miles
<i>Armament:</i>	1 x 4.1", 1 x 37 mm. A.A., 1 x 20 mm. A.A., 2 x 21" torpedo tubes (15 torpedoes)

Designed as mine-layers but employed largely as cargo-carriers.

Type XIV

<i>Complement:</i>	52
<i>Displacement:</i>	1,688/1,932 tons
<i>Speed:</i>	14½ knots, surface ; 6½ knots submerged
<i>Range:</i>	9,300 miles
<i>Armament:</i>	2x 37 mm. A.A., 1 x 20 mm. A.A., (4 torpedoes as cargo)
<i>Complement:</i>	53

Ocean-going tanker or "milch-cow" designed to replenish operational boats at sea. 432 tons of oil fuel was carried as cargo.

ITALIAN SUBMARINES

U It-22 (ex-*Alpino Bagnolini*)

Range: 9,500 miles
Armament: 1 x 3.9", 2 x 2 13 mm. A.A.,
 8 x 21" torpedo tubes.
Complement: 57.

U It-23 (ex-*Reginaldo Guiliani*)

Displacement: 1,166/1,484 tons
Speed: 18 knots, surface; 8 knots submerged

U It-24 (ex-*Commandante Capellini*)

Displacement: 1,060/1,313 tons
Speed: 17½ knots, surface; 8 knots submerged
Range: 7,500 miles
Armament: 2 x 3.9", 2 x 2 13 mm. A.A.,
 8 x 21" torpedo tubes
Complement: 57.

U It-25 (ex-*Luigi Torelli*)

Displacement: 1,191/1,489 tons
Speed: 18 knots, surface; 8 knots submerged
Range: 10,500 miles
Armament: 1 x 3.9", 2 x 2 13 mm. A.A.,
 8 x 21" torpedo tubes
Complement: 57

Morison says, "Although Italian submarines were considered by American Naval officers to be superior to the German 500 and 740 tonners, they were not operated nearly so skilfully or aggressively."

JAPANESE SUBMARINES

I boats

<i>Displacement:</i>	1,600 tons or up to over 2,000 tons surface
<i>Speed:</i>	20 knots, surface; 8 knots submerged
<i>Range:</i>	10 — 16,000 miles
<i>Armament:</i>	one 12 cm. or two 14 cm. gun. 8 x 24" torpedo tubes
<i>Complement:</i>	80 — 90.

The I type boats were all large, fast ocean-going craft but varied in displacement and weapons. 3 boats of the I 400 class displaced 3,430 tons; many carried aircraft or midget submarines. Admiral Nimitz comments ". . . the Japanese I class was fairly comparable to the U.S. fleet boat". Admiral Fukutome says the "Germans criticised the excessive hull-vibration."

RO boats

<i>Displacement:</i>	525/600 tons
<i>Speed:</i>	16 knots surface
<i>Range:</i>	3,500 miles
<i>Armament:</i>	4 x 24" torpedo tubes
<i>Complement:</i>	38.

Described as "small and obsolete" by Admiral Nimitz, they were not a success, possibly because they were called on for more than the designers intended, namely coastal defence.

ALLIED SUBMARINES

BRITISH

T Class (*Tally Ho, Telemachus, Trenchant* etc.)

<i>Displacement:</i>	1,090/1,575 tons
<i>Speed:</i>	15.25 knots surfaced ; 9 knots, submerged
<i>Range:</i>	8,000 miles
<i>Armament:</i>	1 x 4", 2 x 20 mm. A.A., 10 x 21" torpedo tubes
<i>Complement:</i>	53.

S Class (*Storm, Stonehenge, Stratagem* etc.)

<i>Displacement:</i>	715/1,000 tons
<i>Speed:</i>	14 knots surfaced ; 10 knots, submerged
<i>Range:</i>	6,000 miles
<i>Armament:</i>	1 x 3", 1 machine-gun 6 x 21" torpedo tubes
<i>Complement:</i>	40.

Porpoise Class

<i>Displacement:</i>	1,500/2,053 tons
<i>Speed:</i>	15 knots surfaced ; 8.57 knots, submerged
<i>Range:</i>	8,400 miles
<i>Armament:</i>	1 x 4" 2 machine-guns 6 x 21" torpedo tubes
<i>Complement:</i>	59.

U.S.A.

Corsair or Tench Class (*Grenadier, etc.*)

<i>Displacement:</i>	1,570/2,415 tons
<i>Speed:</i>	20.25 knots surfaced; 10 knots, submerged
<i>Range:</i>	
<i>Armament:</i>	1 x 5" 2 x 20 mm. A.A., 10 x 21" torpedo tubes
<i>Complement:</i>	76 — 85.

Balao Class (*Besugo, etc.*)

<i>Displacement:</i>	1,526/2,424 tons
<i>Speed:</i>	20 knots surfaced; 9 knots, submerged
<i>Range:</i>	
<i>Armament:</i>	1 x 4", 2 x 20 mm. A.A., 10 x 2" torpedo tubes
<i>Complement:</i>	66 — 80.

Pike Class (*Tarpon, etc.*)

<i>Displacement:</i>	1,310/1,968 tons
<i>Speed:</i>	19 — 20 knots surfaced; 8 — 10 knots, submerged
<i>Range:</i>	12,000 miles
<i>Armament:</i>	1 x 4", 2 x 20 mm. A.A., 6 x 21" torpedo tubes
<i>Complement:</i>	57.

Gato Class (*Flounder, etc.*)

Displacement: 1,525/2,415 tons
Speed: 20.25 knots surfaced ;
10 knots, submerged
Range:
Armament: 1 x 3", 2 x 20 mm. A.A.,
6 x 21" torpedo tubes
Complement: 65.

DUTCH

Zwaardvisch

Displacement: 1,170/1,430 tons
Speed: 15 knots surfaced ;
8 knots, Submerged
Range:
Armament: 1 x 4", 1 x 20 m.m A.A.,
11 x 21" torpedo tubes
Complement: 65.

U-BOATS SENT TO FAR EAST

U-boat	Sunk : location		Forces responsible			
	Atlantic	East of Cape of Good Hope	Air	Sea	Date	Survivors
68	*		U.S.N.		10. 4.44	
168		Batavia		Dutch sub.	6.10.44	
177	*		U.S.N.Lib.		6. 2.44	
180	Biscay		R.A.F. mine		22. 8.44	
178						Bordeaux 20.8.44
181						I-501
183		Java Sea		U.S. Sub.	23. 4.45	Singapore
188						Bordeaux 8.44
195						I-506
196		Sunda Str.		R.N. Mine	11.44	
197		S. of Madagascar	R.A.F.		20. 8.43	
198		N. of Seychelles		R.N. sloop & frigate	12.8.43	
200	*		U.S.N.		24.6.43	I-505
219						Surrendered
234					5.45	U.S.A.
462	Biscay		R.A.F.		30.7.43	
487	*		U.S.N.		13.7.43	
490	*		U.S.N.		6.6.44	
506	Biscay		U.S.A.F.		12.7.43	
509	*		U.S.N.		15.7.43	
510					24.4.45	Surrendered
514	Biscay		R.A.F.		8.7.43	St. Nazaire
516						Diverted to Caribbean
532					7.5.45	Surrendered Liverpool

U-boat	Sunk : location		Forces responsible			Survivors
	Atlantic	East of Cape of Good Hope	Air	Sea	Date	
533		Gulf of Oman	R.A.F.		17.10.43	
537				U.S. Sub.	9.11.44	
843	Kattegat	N. of Java	R.A.F.		9.4.45	
847	*		U.S.N.		27.8.43	
848	*		U.S.N.— U.S.A.		5.11.43	
849	*		U.S.N.		25.11.43	
850	*		U.S.N.		20.12.43	
851	*		unknown causes			
852		Somaliland	R.A.F.		3.5.44	
859		Off Penang		R.N. Sub.	23.9.44	
861						Trondheim
860	*		U.S.N.		15.6.44	
862						I-502
863	*		Liberators U.S.N.		29.9.44	
864	Bergen			R.N. Sub.	9.2.45	
867	Shetlands		R.A.F.		19.2&44	
871	*		R.A.F.		26.9.44	
1059	*		U.S.N.		19.3.44	
1060	Norway		R.N.		27.10.44	
1062	*			U.S.N.	30.9.44	
1224				U.S.N.	13.5.44	
45	25	9	24 14 U.S. 9 R.A.F. 1 R.N.	10 4 U.S.N. 4 R.N. 1 operational 1 Dutch Sub.		11
U-It	*		S.A.A.F.		11.3.44	
22		Malacca St.		R.N. Sub.	15.2.44	
23						I-503
24						I-504
25						

JAPANESE SUBMARINES BASED ON PENANG

No.	S u n k	Date
I-8	Off Okinawa by U.S. destroyers.	4. 7.1944
I-10	Marianas by U.S. destroyers.	31. 4.1945
I-16	Solomons by U.S. destroyer-escort.	19. 5.1944
I-18	Solomons by U.S. destroyer and aircraft.	11. 2.1943
I-20	Solomons by U.S. destroyers.	1.10.1943
I-26	West Pacific Unknown causes.	October 1944
I-27	Maldives by R.N. escorts.	12. 2.1944
I-29	S. Formosa by U.S. submarine.	26. 7.1944
I-30	Singapore by R.N. mine.	13.10.1942
I-34	Penang by R.N. submarine.	12.11.1943
I-37	Palau by U.S. destroyers.	19.11.1944
I-52	W. of Cape Verde by U.S.N. aircraft.	23. 6.1944
I-162	Ran aground in S. Korea.	26. 6.1945
I-165	Central Pacific by U.S.N. aircraft.	27. 6.1945
I-166	Malacca Straits by R.N. submarine.	17. 7.1944
RO110	E. Indian coast by R.N. escorts.	11. 2.1944
RO111	Admiralty Islands by U.S. destroyer.	11. 6.1944
RO113	Luzon by U.S. submarine.	13. 2.1945
RO115	Phillipines by U.S. destroyers.	31. 1.1945

TONNAGE OF ALLIED MERCHANTMEN SUNK IN INDIAN OCEAN

(Taken from *S.W. Roskill, The War at Sea, H.M.S.O., 1956/61*)

1942	Tonnage	Ships
January	46,062	13
February	38,151	18
March	68,539	65
April	153,930	31
(23 ships of 112,000 tons sunk by raiding surface Squadron in Bay of Bengal)		
May	22,049	4
June	90,322	18
July	47,012	9
August	5,237	1
September	30,051	6
October	63,552	11
November	131,071	23
December	28,508	6
Total	724,485	205
1943	Tonnage	Ships
January	—	—
February	15,787	3
March	62,303	10
April	43,007	6
May	28,058	6
June	67,929	12
July	97,214	17
August	46,401	7

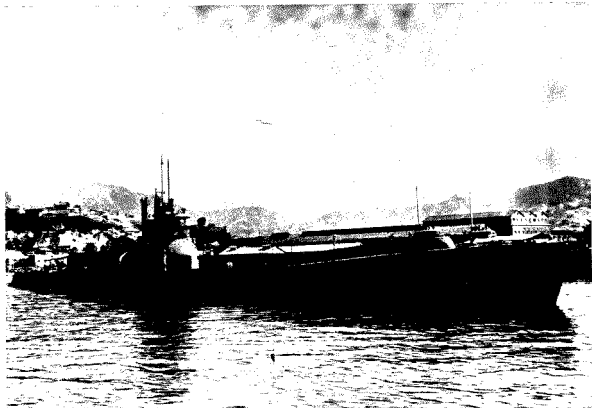
September	39,471	6
(For August and September includes 5 U-boats and 8 Japanese Submarines, opera- tional in Indian Ocean)		
October	25,833	6
November	29,148	4
(all Japanese Submarines)		
December	31,173	5
(all Japanese Submarines)		
Total	486,324	82

1944	Tonnage	Ships
January	56,213	8
February	64,169	10
March	75,489	12
April	—	—
May	—	—
June	19,319	3
July	30,176	5
August	57,732	9
September	5,670	2
October	—	—
November	14,025	2
December	—	—
Total	322,802	50

1945	Tonnage	Ships
January and February	8,982	3

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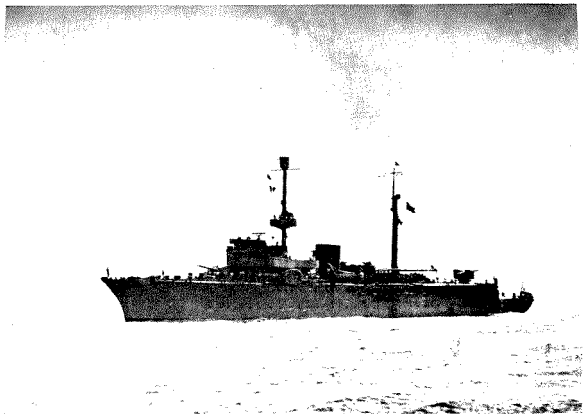


I

Japanese Submarine I-402 at KURE,
post-war, possibly Sept. 1945.

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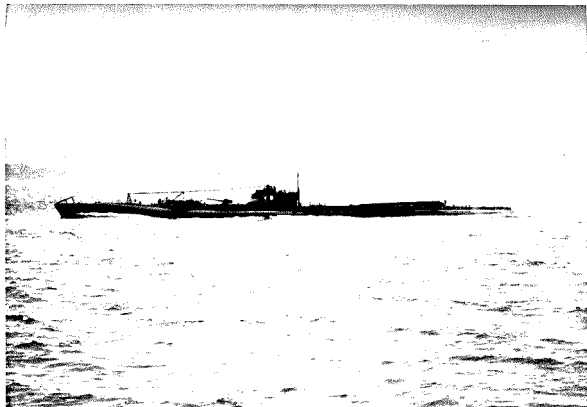




II Portside view of the ERITREA.

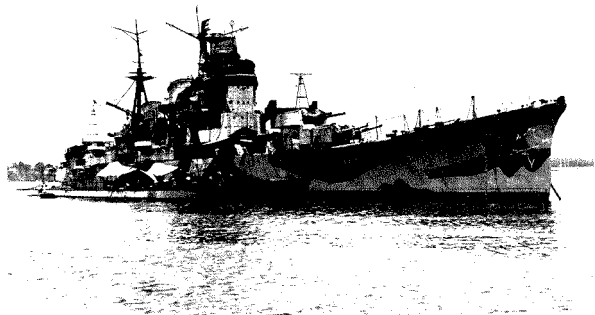
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III Japanese Submarine I-8 entering
KAGOSHIMA BAY (12-4-39).

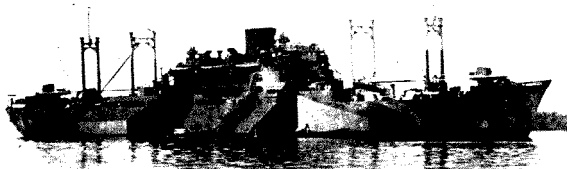
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IV U-862 and U-181 alongside the cruiser Myoko
after the surrender of Singapore in 1945

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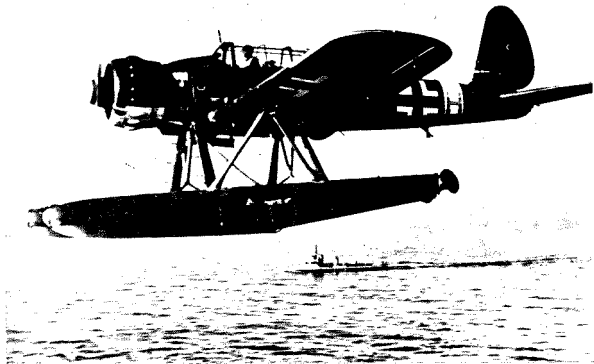




V Japanese Armed Merchant Cruiser AIKOKU
MARU, Seletar, Singapore. 29-7-1942.

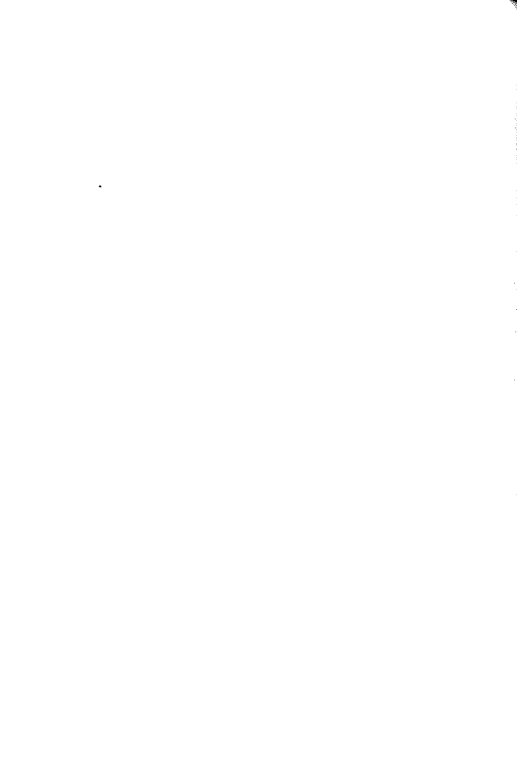
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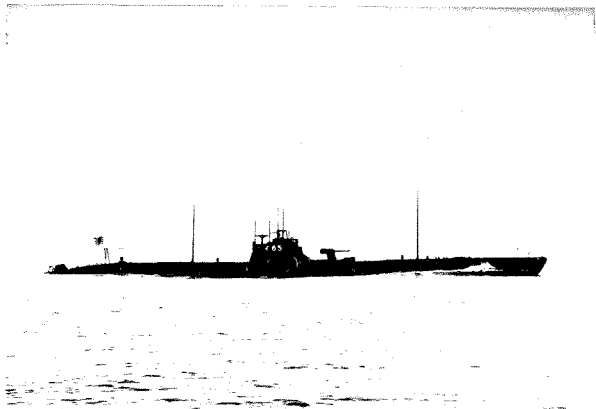




VI ARADO FLOAT PLANE of the type based on Penang in 1944.

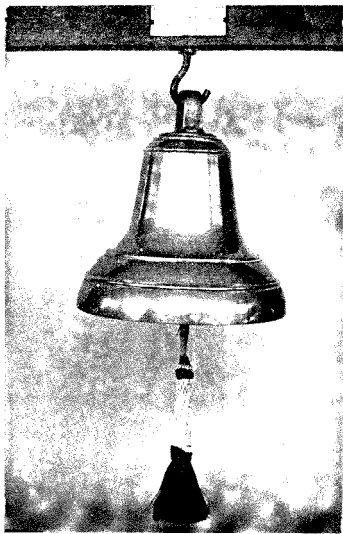
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VII Japanese Submarine I-165 (Ex. I-65)

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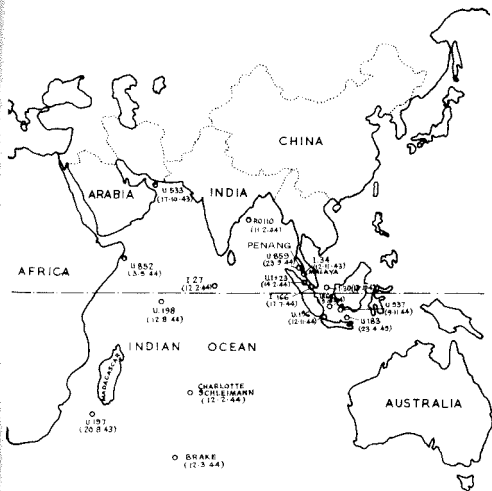
VIII

Bell of I-34.



I INDIAN OCEAN

AXIS SUBMARINES SUNK ON PASSAGE TO OR FROM FAR EAST



II ATLANTIC

AXIS SUBMARINES SUNK ON PASSAGE TO OR FROM FAR EAST



III NORTH ATLANTIC AND EUROPEAN WATERS

U-BOATS SUNK ON PASSAGE TO OR FROM FAR EAST

