NAVAL WARFARE
in
WORLD WAR TWO

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Also by Bill Brady

World War Two, Cause and effect
The Global Triumph and Tragedy 1939-45
US Pacific Victory in World War Two
Commanders of World War Two

For all my family and friends and to all those brave young men
who have died before their time.

FOREW0RD

HMS Hood! The battleship which was the pride of the British Royal Navy but in May 1941 was sunk in one blinding flash with one accurate hit.

Bismarck! The pride of the German Navy and Germany's latest battleship which sank Hood and in turn was hunted down mercilessly by the British Royal Navy a few days later and also sunk. These actions and events are beautifully described and told by Bill Brady, a master writer and lecturer of World War Two History.

Other battles and actions are also described in this very interesting history and without prolix. Up to then battleships were considered the major naval force only for it to be demonstrated once more on the 7th December 1941, when carrier based aircraft of the Imperial Japanese Navy bombed the American Pacific Fleet at Pearl Harbor that battleships were now anachronisms. The day of the battleship was over.

Bill Brady has already demonstrated, in his previously published works, that he is able to relate important war history in a manner which keeps the student of history avidly reading ever onwards and devouring the knowledge which has been imparted by this master historian. In respect of experienced and active historians the narratives they are about to read will assist in refreshing memories.

This is a work which no doubt will stand the rigours of time as it occupies rightful space in both official and personal libraries, and for all posterity ever available for reference, research or reading purposes.

Graham L Coggin

Business Process Re-Engineering Practitioner,
Writer and Author

NAVAL WARFARE in WORLD WAR TWO

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INTRODUCTION
THE TRAGEDY OF WORLD WAR TWO

World War Two was the most terrifying reality of modern times. It was the first global conflict to be fought with equal intensity in all parts of the world. It was fiercer and more destructive than any in history with domination of the world at stake.

Possibly, most people see World War Two in rather simplistic terms. Hitler, Mussolini and Tojo started the war; they were the aggressors; and got exactly what they deserved. However, in history there are few genuine villains and even fewer genuine heroes.

Today, one can afford to take a less emotional look at the greatest war in all history and examine its causes with a more critical eye. This is mainly due to documents only recently being made available which cast new light on the once seemingly simple story of the good guys defeating the bad guys. It can no longer be argued that Hitler, and Hitler alone, caused the war in Europe, any more than it can be argued that Japan started the war in the Pacific. It is debatable that both Germany and Japan were provoked by the Western Powers.

The Germany of the Weimar Republic was a creation of the First World War; it was born out of defeat and humiliation. By 1933 the Weimar Republic was wholly discredited, blamed both for the Treaty of Versailles, that shackled Germany, and for the Great Depression. Few Germans accepted the events of the final months of World War One.

After four nightmare years, they would not believe that the German army had been beaten. After all Germany's frontier had not been crossed by enemy troops in action. Indeed, only a few months before the wars end, the German army had pushed back the Allied front to within 40 miles of Paris. To the German civilian, at that time, victory had seemed imminent. Then General Ludendorf had urged the Berlin government to make peace. The German public was shocked when on the eleventh hour on the eleventh day of the eleventh month the armistice to end the First World War came into effect in 1918.

Bismarck's second Reich had collapsed, betrayed by the so called “November criminals”. To the masses, the German armies were not defeated in the field. They marched back into their own country with flags flying and bands playing after their long occupation of other countries, only to find that sailors and civilians had attempted a revolution whilst they had been fighting. The victorious powers then proceeded to strip Germany of territory and demanded her to pay huge reparations.

This served Hitler and the Nazis purpose and they promoted the “stab in the back” propaganda. The Treaty of Versailles imposed upon Germany undoubtedly sowed the seeds of World War Two. Germany sought vengeance and this was given added stimulus when Hitler came to power in 1933. Hitler threw off the shackles of the Versailles Treaty, remilitarised the Rhineland, introduced conscription, annexed Austria and occupied Czechoslovakia. Hitler promised and provided jobs; he also eradicated most political rights and began harassment of the Jews.

Britain and France did not begin to stir until Hitler's troops re-occupied the Rhineland in March 1936. At this stage France alone had the capability of moving into the Rhineland and if she had done, so. Hitler would have backed down rather than face a confrontation. But France lacked the will. From this moment on Hitler knew that the Western Democracies could be pushed. Only France believed in upholding the letter of the Treaty. Britain had no interest in the Treaty, which she now considered unjust (in theory anyway).

When Hitler marched the Wehrmacht into Austria in March 1938, Britain and France merely complained and did nothing. As long as he confined his interests to Eastern Europe, they were more or less content to let him have his way. The annexation of the Sudetenland of Czechoslovakia was another matter. But Hitler argued that the people there were German speaking and wanted union with Germany, which was true.

British Prime Minister, Neville Chamberlain had no intention of going to war, and the Munich Conference sealed the fate of Czechoslovakia. It is now known that if Britain and France had resisted, the German General Staff would have overthrown Hitler. But the Western Powers had allowed Czechoslovakia to be abandoned and dismembered. On 15th March 1939 in the aftermath of Munich Hitler invaded Czechoslovakia and drove through Prague in triumph. Thereby, dismissing claims he only wanted to bring Germans into the Reich. Millions of Slavs were unwillingly wedded to Germany, and Hitler's long-term goal of a German empire in the east was now evident.

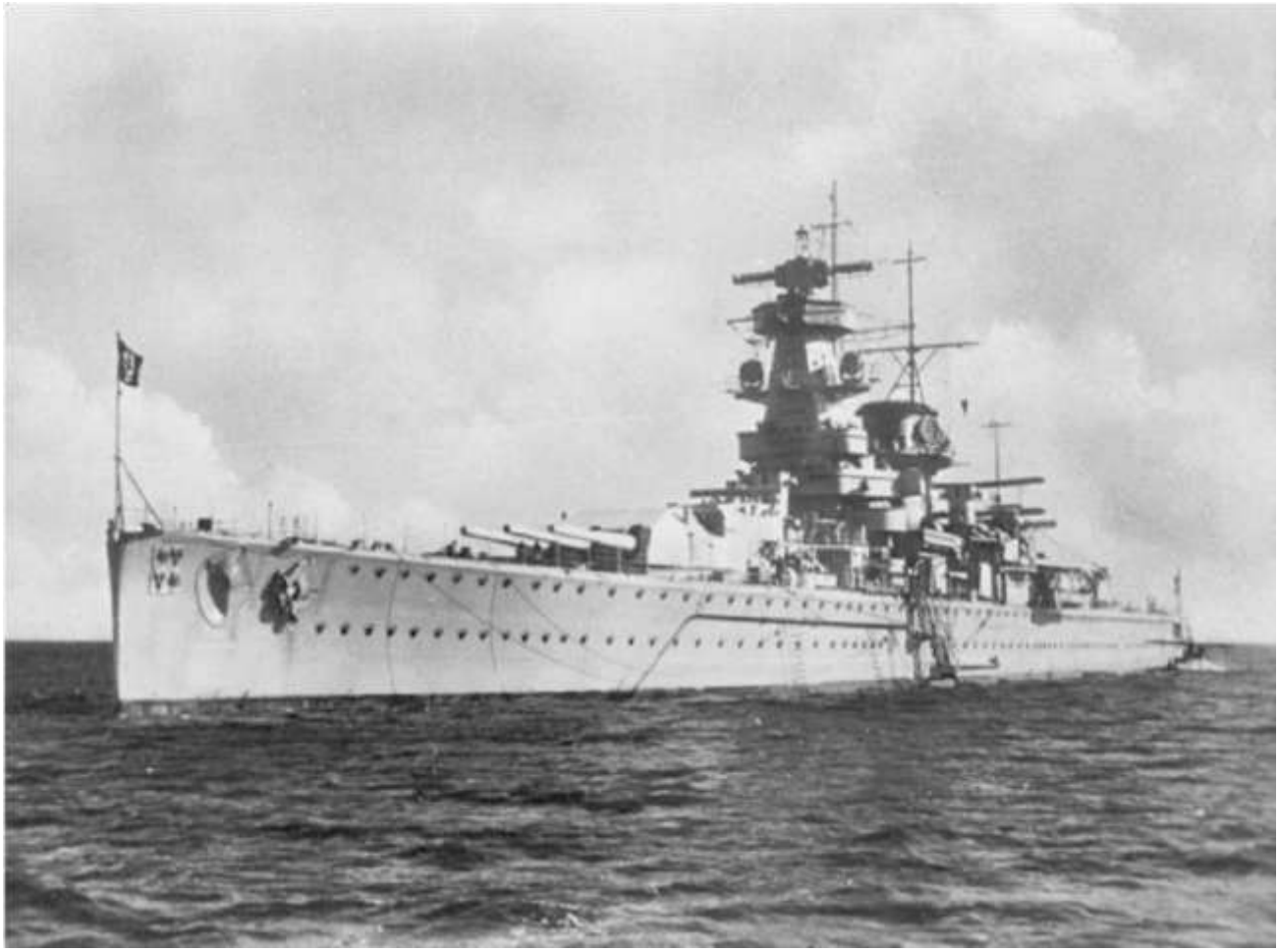
This was a decisive moment for the West. Now it could no longer be argued that Hitler only wanted to bring Germans in Central Europe into his Reich. Herr Hitler was no longer considered a gentleman to be trusted. The policy of appeasement championed by Neville Chamberlain now lay in ruins. He felt betrayed by the Nazi seizure of Czechoslovakia, finally realising that his policy towards the dictator had failed. The will of Britain stiffened and with it the resolve of France, who was pledged to defend most of the states of Eastern Europe. The British began to mobilise on a war footing. The French did the same.

With Austria and Czechoslovakia now in his hands, Hitler turned to Poland. It was intolerable to him that the German province of East Prussia on the Baltic was separated from the rest of the Reich by a corridor that gave Poland its only access to the sea at Danzig. On April 1939 the British gave a public guarantee to Poland that were she to be attacked by Germany, Britain would go to war. Strange as it seems, no such guarantee was given regarding Soviet aggression.

When Hitler began his demand for the return of German Danzig, then under the League of Nations authority as a free city, Britain began to talk to the nation that she feared as much as Germany, the Soviet Union. But Stalin saw at once that Britain's tentative steps towards a Russian alliance were not sincere, and soon began covert negotiations with his bitter ideological enemy

Hitler read the situation correctly and initiated a brilliant diplomatic counter stroke which completely outwitted the Western Allies. Neither the Axis powers nor the democracies could engage in war without reaching some prior understanding with Russia.

CHAPTER ONE



THE BATTLE OF THE RIVER PLATE

On December 1939 a Royal Navy Squadron consisting of the Heavy Cruiser Exeter, and the Light Cruisers Ajax and Achilles intercepted the German Pocket Battleship Graf Spee. A classic naval engagement then took place off the South American coast near Uruguay that became renowned as the Battle of the River Plate. During the battle the Graf Spee put the Exeter out of action, seriously damaging both the Ajax, and the Achilles.

The Graf Spee, however, also received a number of hits and her captain thought it necessary to take refuge in Montevideo for repairs. He was convinced that stronger British naval forces were

close at hand and being unable to complete the repairs within the allotted time, the Graf Spee was blown up by her crew.

This spectacular feat of naval arms, won primarily by psychological means, held the world's attention. It also earned worldwide admiration for the Royal Navy and gave a lift to British morale. The destruction, of such a formidable warship that the Germans claimed to be invincible, by three outgunned British cruisers, set off a great outburst of rejoicing in Britain. It was the first victory of the war and Churchill summed up the mood of the people when he exulted; *"In a cold winter it warmed the very cockles of the nation's heart".*

Why did this naval battle mean so much to the people of the British Empire? Particularly, as it virtually paled into insignificance when compared to later epic sea battles, such as the sinking of the Bismarck; the Fleet Air Arm victory at Taranto that crippled the Italian navy; Pearl Harbor that brought the United States into the war; Midway, that broke the back of the Japanese naval air strike force; and Leyte Gulf that destroyed the Japanese surface fleet to establish the United States as an incontestable naval power.

All of these operations were of far greater importance than the Battle of the River Plate.

There are several factors that need to be considered; at the end of World War One, under the Versailles Treaty, Germany was only permitted to build warships up to a certain size. Battleships in particular, were restricted to a mere 10 000 tons. However, due to German ingenuity and technological skills, there emerged a completely new warship design and this unique concept was dubbed the 'Pocket Battleship'. These brilliantly engineered warships had six 11 inch guns plus eight 5.9 inch guns and were capable of 26 knots. They were slightly larger than the Washington Treaty conventional cruisers but much smaller than contemporary battleships. These diesel powered warships had a wide radius of action that allowed them to cruise over the oceans without relying on land bases.

Three of them were built; besides the Graf Spee, there was the Deutschland and the Admiral Scheer, each with a complement of nearly one thousand two hundred men. The Deutschland was later renamed Lutzow as Hitler did not wish any ship named after the Fatherland to be sunk. These ships were expected to play a crucial role in the 'Battle of the Atlantic'. A campaign that would totally dominate British naval policy throughout the war; and, on which everything ultimately depended. The sacrifice was horrific; 2 800 allied merchant vessels, and almost 200 warships were sunk, culminating in the loss of forty thousand Allied seamen and 15 million tons

of shipping. Focusing specifically on the Graf Spee; the saga opened when she slipped out of port in August 1939, just before the outbreak of hostilities and secretly sailed to the South American shipping routes. Graf Spee's supply ship the Altmark also sailed to a predetermined rendezvous position in the Atlantic. The German naval command hoped to achieve immediate and crushing results through the operation of their pocket battleships.

On the declaration of war on 3rd September 1939, Graf Spee camouflaged her appearance and successfully deceived merchantmen into thinking that she was a French heavy cruiser. She also proved to be most elusive, and her speed and unpredictability enabled her to sink nine merchant ships totalling 50 000 tons in three months. Some of Graf Spee's victims did, however, manage to transmit distress signals, thus alerting the admiralty that a pocket battleship was at large. As a result all available Allied battleships, battle cruisers and cruisers were formed into powerful hunting groups to search the entire Atlantic oceans from Greenland to the Falklands. This was of course, part of German strategy; that is to disperse the Royal Navy's superior strength.

With this intention, the Graf Spee headed for the Indian Ocean, and on 3rd November 1939, she steamed 400 miles south of Cape Town. Well out of reach of air reconnaissance; and thrust up the South African coast line to the Mozambique Channel. Consideration was given to using Graf Spee's Arado spotter aircraft to bomb Durban's oil storage tanks, but this was considered too risky and abandoned. Shortly after arriving in the Mozambique Channel, the Graf Spee intercepted and sank the British oil tanker Africa Shell.

Consequently, a senior officer stationed at Durban, on receiving a distress signal from Africa Shell radioed a warning of the presence of a German surface raider in the Indian Ocean. This electrified the British

Admiralty, resulting in several Royal Navy hunting ships to be redirected to this area. Graf Spee's Captain Langsdorff picked up the warning signal and concluded that his mission in the Indian Ocean had succeeded. He therefore, returned to the South Atlantic for a final campaign before triumphantly returning to Germany for Christmas and an engine overhaul.

Meantime, Commodore Henry Harwood, commander of the Royal Navy cruiser squadron 'Force G' in the South Atlantic had shrewdly calculated the reason behind the Graf Spee's foray into the Indian Ocean. He estimated she would soon be lured back to the South Atlantic and the rich shipping harvest at the River Plate. He therefore, patrolled this region with the heavy

cruiser Exeter and the light cruisers Ajax and Achilles. He was aware that the Graf Spee had the advantage of knowing that all warships sighted were enemy ships and due to her taller look-out mast and aircraft would 13th December when the Graf Spee lookout spotted warship masts on the horizon.

Langsdorff knew they had to be enemy ships, but due to his spotter plane being out of action, due to a cracked cylinder block he mistakenly assumed they were probably light vessels escorting a convoy. He soon realised his mistake when the heavy cruiser Exeter accompanied by two light cruisers were identified. Nevertheless, he reasoned that he would be unable to shake off the faster British ships and decided that action was unavoidable. But, in committing the Graf Spee to attack Langsdorff was effectively ignoring strict orders not to engage enemy warships. He was specifically forbidden to expose his ship to the risk of a naval battle. In total disregard of instructions, Langsdorff ordered battle stations and full speed ahead towards his adversaries.

Commodore Harwood aboard his flag ship Ajax ordered Captain Bell on the Exeter to close and investigate the smoke on the horizon. The pocket battleship was quickly identified; at long last the Royal Navy had found its elusive enemy and the ‘Battle of the River Plate’ was about to commence. Ajax, Achilles and Exeter prepared to engage Germany's fabled pocket battleship in deadly combat and more than one hundred brave young sailors would lose their lives.

In terms of weight of guns and armour the odds were certainly in German favour, but the British had the advantage of numbers and manoeuvrability. The Graf Spee’s gunners were now forced to choose between three objectives while the British could concentrate on only one target. Graf Spee’s 11 inch guns had a range of 17 miles, the 6 inch guns of Ajax and Achilles, 10 miles and Exeter's 8 inch guns, 15 miles. On the face of it Langsdorff had little to fear, and could engage effectively out of range of the three British cruisers. He was confident that his much more powerful main armament would make short work of the Royal Navy's lighter ships.

On the other hand and regardless of the odds, Harwood had a centuries old naval tradition to uphold, and immediately deployed his ships into their pre-arranged positions with the objective of splitting the enemy’s fire. He likewise ordered action stations and full speed ahead; the heavy cruiser Exeter to engage on starboard and the two light cruisers on the port side. The German pocket battleship prepared to simultaneously engage the two smaller ships with her secondary

guns and trained her main armament guns on the Exeter. Visibility was near perfect when Graf Spee closed rapidly and opened fire. In deciding to go for a quick kill, Langsdorff misjudged and this cost him his principal advantage of not only outranging but also out-gunning his adversaries. But, it was too late for that now.

The Graf Spee concentrated on the Exeter and soon straddled her to wreck 'B' turret. The next salvo hit Exeter amidships and everyone on the bridge except Captain Bell was badly injured or killed. It is difficult to imagine what it must be like aboard a ship during battle. There is little to compare to the hell and brutality of a sea-battle; men are trapped in combating warships that literally throw tons of high explosives at each other, and when hit, a deafening explosion sends lethal particles of shrapnel within the ship's interior; causing unfortunate men to be cut down instantly in death or mutilation. The fire, fumes and flooding in darkened confined spaces must bring terror to the survivors.

Returning to the action, as Graf Spee closed in to finish off the Exeter, her sister ships, Ajax and Achilles raced forward with all guns blazing, forcing the German pocket battleship to switch her heavy armament to them. Thus allowing Captain Bell to take the badly listing Exeter away just as her last gun was put out of action. She had been reduced to a floating inferno and forced to limp southwards to the Falklands.

Most of Ajax's guns were soon out of action, and under cover of a smoke screen fired torpedoes at her foe. Graf Spee turned away to avoid the torpedoes and at this point inexplicably seemed to lose heart and decided to break off the 90-minute action. It is difficult to imagine why a much heavier armed and formidable ship should run from two damaged light cruisers instead of eliminating them. The difference was possibly due to the British commander knowing exactly what he intended to do and the German commander not.

In deciding to attack, Langsdorff should have finished off the Exeter quickly before the two light cruisers could take up position. And by frequently changing from one target to the other, the Graf Spee's rate of fire was enormously slowed up. Possibly it was Harwood's aggressive tactics that confused Langsdorff. This, combined with his indecisiveness over which target to engage with the main armament, the Exeter to starboard or the Achilles and Ajax to port cost the famed pocket battle ship the battle.

Casualties on the British side, however, were heavier than on the German. The crippled Exeter had lost sixty four of her officers and men. The badly damaged Ajax had seven dead and there

were many wounded on the Achilles. Graf Spee's damage initially appeared superficial, but inspection revealed that the galleys were wrecked, and some secondary guns had been put out of action. She was also holed near the waterline, and although she had taken 20 hits and lost thirty six of her crew, her fighting ability was unimpaired.

Langsdorff now had immediate and crucial decisions to make; he ultimately came to the conclusion that his ship was not sufficiently seaworthy to reach Germany. Therefore, he decided to make for the shelter of the nearest neutral port of Montevideo to patch up the damage. Captain Langsdorff had been wounded twice during the action and knocked unconscious; perhaps the temporary concussion he had suffered affected his judgment in reaching this decision.

Several further exchanges of fire were made between Graf Spee and the two damaged British ships trailing her until she docked at Montevideo. On arrival, Captain Langsdorff greeted Herr Otto Langmann, the German Minister with a smart naval salute. The Minister replying with the Nazi version ruefully commented, "Gentlemen I wish I could say welcome to Uruguay, but you have made a serious error in bringing your ship here". The reason was, although Uruguay was a neutral country; her sympathies lay with the Allies. Therefore, the international law that states belligerent warships are only entitled to stay in a neutral harbour for 24 hours was imposed. The Uruguayans later extended the deadline to 72 hours but refused any further extension. Strenuous political negotiation failed to gain further time and Graf Spee was ordered to leave neutral waters by 20 00 hours on the following Sunday 17th December. .

The German authorities actually requested two weeks to repair Graf Spee's damage in the hope that this would provide sufficient time for U Boats to reach the scene and assist the pocket battleship. Ironically, the British also wanted the departure delayed, to provide time for heavier Royal Navy units to arrive. Meanwhile the crew of the Graf Spee was allowed to disembark in full uniform for the burial of the thirty six fellow crew members that had been killed during the battle. With the exception of Captain Langsdorff, everyone at the service, including the priests, saluted in Nazi style.

During the next few days intense British diplomatic manoeuvres combined with false and misleading reports led Langsdorff to conclude that he was trapped and internment or scuttling

were the only choices open to him. He was mistakenly informed that Royal Navy heavy ships including the Battle Cruiser Renown and the Aircraft Carrier Ark Royal were waiting for him.

The Graf Spee had used up more than half her ammunition during the battle. He reasoned, therefore, that a similar naval battle would have been beyond Graf Spee's fighting capacity. He deemed the situation hopeless and erroneously thinking that a powerful British fleet was off the coast, communicated his position to the German High Command and put forward three alternatives for evaluation:

1 Internment in Montevideo after the 72-hour deadline had lapsed.

2 Fight out to open sea, or;

3 Scuttle the ship.

German High Command negated any idea of internment and left the final choice to Captain Langsdorff between fighting out to sea and scuttling the ship with the proviso that if he chose to scuttle, then he must ensure the effective destruction of his ship. Captain Langsdorff addressed his crew informing them that he was not prepared to engage in a senseless battle that would only serve to sacrifice their lives in a death or glory attempt to break out to open sea. He further explained that if he chose to ignore the deadline, his ship would certainly be interned and classified information may fall into British hands.

Consequently, on 17th December, the Graf Spee set off slowly from Montevideo harbour toward her fate with battle ensigns flying. The Royal Navy ships reinforced by the heavy cruiser Cumberland that had steamed at record speed from the Falklands closed up for action stations. Over a quarter million people had gathered on the waterfront eager, to witness a great naval battle.

The international spotlight for the previous four dramatic days had been cantered on Montevideo. Front pages around the world were reporting the full story and an American radio broadcast, live from Montevideo, filled the international airwaves with updates of the developments. The British cruiser squadron and millions of anxious listeners expected the pocket battleship to come out with guns blazing. Naval tradition demanded she battle her way out or go down fighting. Tension mounted as Graf Spee made for the territorial limit.

The hundreds of thousands watching the spectacle and the world wide listeners to the running commentaries from Montevideo were shocked when it was sensationally broadcast that a huge explosion had engulfed the Graf Spee. Langsdorff had deduced there was no alternative against reportedly overwhelming odds but to scuttle. Thus bringing this fine ship, that had sunk 50 000 tons of merchant shipping, and tied down half the British fleet for three months, to an ignominious end.

Langsdorff then took his crew on tugs to a German merchant ship and disembarked in Buenos Aires. They were interned and remained there for the rest of the war; many of them stayed on after the war

It later emerged that Langsdorff had been dissuaded by his officers from personally setting off the explosives and going down with his ship. However, now that he considered he had done all he could possibly do for the welfare of his crew and not wishing any dishonour of the flag, he decided he could not survive his ship. Three days later Captain Langsdorff dressed in full uniform, wrapped himself in the imperial German flag that he had fought under at Jutland, and shot himself. German and British seamen plus local dignitaries paid their last respects to Captain Langsdorff when he was buried with full military honours.

The aftermath of this classic naval engagement and some of the foremost personalities involved, deserve closer examination.

What kind of a person was Captain Langsdorff, bearing in mind that his significant role in the dramatic saga of the Graf Spee has remained controversial and obscure? Hans Wilhelm Langsdorff was the 18year-old son of a Düsseldorf judge when he joined the Imperial German Navy in 1912. He saw front line action at the Battle of Jutland in 1916 and served the remainder of the war commanding minesweepers. After the war he served as a Staff Officer before taking command of Graf Spee in 1938.

Langsdorff was actually considered by many to be an officer and a gentleman of the old school. After his death, several noted historians considered him to have been a ‘first class person’. Describing Langsdorff as a highly trained, intelligent naval officer who achieved his wartime objectives while maintaining personal codes of honour and decency; faithfully fulfilling his duties. They further state; ‘In World War Two, mankind sank to abysmal levels of inhumanity. But, in December 1939, German Captain Hans Langsdorff gave the world a matchless example of personal integrity and human compassion’.

So, it would appear that at the time of the Battle of the River Plate, he was thought to be an exceptional naval commander and a man of the highest character. This may be borne out by the fact that he had dispatched Allied merchant shipping without inflicting the loss of a single life, even though this certainly put his ship and crew at risk. Of the sixty two prisoners from captured merchant vessels, on board of the Graf Spee, not one got harmed, not even during the battle.

But in Nazi Germany the media information about the battle was suppressed and Graf Spee's commander never received any credit for his efforts. In fact, the country he fought and died for demeaned his actions. Hitler was most displeased with Langsdorff and chastised him for not fighting to the finish and going down with his ship. Immediately after the loss of Graf Spee, Admiral Raeder, the German Navy Chief, criticised Captain Langsdorff, claiming that he had lost *Graf Spee* when he ignored standing orders, that is not to seek battle with enemy warships.

Raeder ordered there would be no repeat of Graf Spee's scuttling stating: "In future a German warship and her crew are to fight with all their strength until they are victorious or go down with their flag flying". It would appear that this may have been a political standpoint because privately Raeder sent a letter to Langsdorff's mother, praising her son as an excellent officer, remarking favourably on his noble character and stated that he fought like a gentleman and died like a gentleman.

These are all the accolades that were heaped on Captain Langsdorff. But in probing a little deeper, the obvious question is, did he commit suicide to show that he had not acted out of cowardice but to save his men, or, was it to avoid court martial for disobeying orders? Why did he not use his Arado aircraft, or on the assumption they were unserviceable, use land based air reconnaissance to ascertain actual British naval strength off the coast? It is fine to be an officer and a gentleman, and it is OK to be mister nice guy and be popular with your men; but the priority is to get the job done.

Churchill said after Dunkirk "wars are not won by evacuation". In this case then, scuttling your ship and blowing your head off, regardless of the excuses, do not win naval battles. When has a Royal Navy commander ever scuttled his ship to avoid contact with perceived superior enemy forces? The opposite in fact has occurred on many occasions. An example is the destroyer Glowworm attempting to ram the German heavy cruiser Hipper at Norway. There is also the

armed merchantman Jervis Bay taking on the pocket battleship Admiral Scheer in an effort to protect an Atlantic convoy. After all, war is war, and you provide your enemy with victory on a plate by scuttling your ship and committing suicide. The objective is to inflict as much damage as possible on your enemy not to self-destruct.

To quote General Patton; “Nobody ever won a war by dying for his country, the idea is to make the enemy die for his”.

It has also been suggested that Langsdorff was ordered by Hitler to commit suicide, but there is no evidence to support this. Furthermore, Captain Langsdorff did not display good tactical awareness and appeared to be devoid of any battle plan, being reactive not proactive. Perhaps he had no stomach for confrontation.

As the war progressed, the pocket battleships, despite the enormous range provided by their diesel engines failed to live up to expectations. In 1942 for example, in comparison to the Allied losses inflicted by the U Boats, the entire German surface fleet sank the equivalent of what the U Boats achieved in just one month.

What happened to the Royal Navy ships that seen action at the River Plate? The Exeter, after surviving the 11-inch guns of the Graf Spee later joined Allied operations at the Dutch East Indies and was sunk by the Japanese at the Battle of Java Sea in 1942. The Ajax served the remainder of the war in the Mediterranean. The Achilles also survived the war. The Achilles saw action at Normandy, destroying a German pillbox; the only Allied warship to achieve this.

Commodore Harwood was knighted and promoted to Rear Admiral. He was only the second naval commander since Admiral Horatio Nelson to be knighted in battle. He died in 1950.

Both British and German participants in the Battle of the River Plate have met several times in friendly reunions since the war. Veterans still celebrate the comradeship that evolved from the River Plate Battle.

For example, a Canadian town in Ontario carries the name ‘Ajax’ in honour of the British cruiser, and has named many streets as a living memorial to the officers and men who manned the British ships. In 1999, a proposal to add Captain Langsdorff's name to the programme was unanimously supported by the veterans. In Germany and Argentina to this day, annual reunions

of Graf Spee's surviving crew members honour the memory of Captain Langsdorff and this loyalty to the Captain has not waned in over sixty years despite continued military criticism of his decisions.

Another irony is that the Battle of the River Plate was the opening British naval victory of World War Two and it took place almost exactly 25 years after the opening British naval victory of World War One in August 1914. The Battle of the Falkland Islands was fought between the same enemies, in the same coastal region. The German commander, Admiral Graf Spee perished with his sons in this engagement with the Royal Navy.

As a postscript, many British merchant crewmen that had been captured by the Graf Spee were later transferred to her supply ship Altmark. Whilst en route to prisoner of war camps in Germany, the Altmark was intercepted in Norwegian territorial waters, by the Royal Navy destroyer Cossack. On the direct orders of the First Lord of the Admiralty, Winston Churchill, the Royal Navy boarded the Altmark and freed the prisoners.

Prior to the Altmark incident in February 1940, Hitler had shown little enthusiasm for the invasion of Norway. However, the incident infuriated and convinced him that Britain was no longer prepared to respect Norwegian neutrality. He subsequently ordered an invasion to be mounted on a top priority basis. A direct result of this campaign was that Churchill replaced Chamberlain as Prime Minister, thus ensuring that Britain would remain in the war until final victory. So, the Battle of the River Plate cannot be viewed in isolation; it did have a profound effect on later developments.

The faint remains of Graf Spee can still be seen in the shallow water and mud where it was scuttled in 1939.

CHAPTER TWO

HMS GLORIOUS

In a lonely parish church situated in the Lake District, there is a stained glass window that commemorates one of the least known incidents of World War Two. The incident occurred on the 8th June 1940 when the aircraft carrier HMS Glorious and her two escorting destroyers HMS Acasta and HMS Ardent, were sunk by the German battle cruisers Gneisenau and Scharnhorst in the Norwegian Sea.

It was a very alert seaman, on watch on the Scharnhorst, who first sighted smoke just after 16 00 hours. Scharnhorst and her sister ship Gneisenau were patrolling off the coast of Norway hoping to intercept Allied convoys evacuating troops after the disastrous Allied campaign in Norway. The German ships turned towards this sighting and soon recognised the unmistakable profile of aircraft carrier HMS Glorious, escorted by two destroyers steaming west.

In a short gun action lasting just over an hour, all three British ships were sunk. Several hundred men survived on rafts and floats, but in the Arctic cold and without food or water, many died of their wounds and of exposure. When rescue finally came three days later, there were only thirty-nine survivors from Glorious and one each from Acasta and Ardent. More than one thousand five hundred officers and men of the Royal Navy, Royal Marines, and Royal Air Force were lost, including highly trained RAF pilots who had gallantly flown their Hurricanes and Gladiators on board the previous evening rather than abandon their aircraft in Norway.

In 1940, the exact circumstances of this tragedy were shrouded in wartime security, but, even after the war, the official explanation left questions which puzzled historians, politicians and the families of those who had died.

Why had the Glorious left the main troop convoy to proceed independently? Why was she not flying a reconnaissance patrol for her own safety? Why did British Intelligence give no warning that the German battle cruisers were at sea? Why were the survivors not found for three days?

The severely embarrassed British Admiralty ordered that the official report should be closed for one hundred years, but pressure from families and relatives led to some earlier releases.

HMS Glorious was the second of the Courageous-class cruisers built for the Royal Navy during World War One. Glorious was completed in 1916 and spent the rest of the war patrolling the North Sea and was present when the German High Seas Fleet surrendered at Scapa Flow. After World War One, the Washington Naval Treaty of 1922 compelled the Royal Navy to scrap many of her older ships. However, some could be converted into aircraft carriers, and the Courageous-class ships with a combination of a large hull and high speed made them ideal candidates for conversion. Glorious was re-commissioned as an aircraft carrier on February 1930 and could carry up to 48 aircraft.

On the outbreak of World War Two, Glorious was serving with the Mediterranean Fleet. Later in November 1939 she moved through the Suez Canal into the Indian Ocean where she became part of the task force that was organised to hunt for the German pocket battleship Admiral Graf Spee. Then in April 1940 she joined the Home Fleet to provide air cover for British forces in Norway.

Glorious and Ark Royal sailed several times between Scapa Flow and Norway to ferry aircraft to shore bases in Norway. But, when Hitler launched his blitzkrieg in the west, Allied troops and

aircraft were needed to counter the threat, and ordered to evacuate from Norway. Glorious arrived off the coast to provide air support and take on board land based aircraft. Gladiators and Hurricanes were flown aboard during the afternoon of 7th June.

The Hurricanes had a much higher landing speed than the biplanes, and the pilots showed great skill in performing this feat without loss. Particularly, as this was the first time that high speed monoplanes without arrester hooks had landed on an aircraft carrier.

Meantime, Norway's King Haakon together with his family and government were rescued and taken aboard the cruiser HMS Devonshire. The commander Admiral Cunningham was under strict orders to maintain radio silence. This was to have serious implications for the Glorious.

The Germans now tried to cut off the Norwegian evacuation, and on 8th June the battle cruisers Scharnhorst and Gneisenau approached, intending to intercept a troop convoy carrying ten thousand men. Their attention was, however, diverted when Glorious and her escorting destroyers Ardent and Acasta appeared on the horizon.

Ark Royal and Glorious were originally to have sailed together in convoy to provide air cover. But in the early hours of that morning, the captain of Glorious requested permission to proceed independently to Scapa Flow. The request was approved and Glorious and her two destroyers parted company from Ark Royal and the main convoy. Unfortunately she was sent right into the jaws of the enemy.

The commander of Glorious, Captain D'Oyly-Hughes was a former submariner and almost totally lacked knowledge of naval aerial warfare. Therefore, he did not believe in the necessity for aerial reconnaissance. He failed to grasp that the security of carriers depended on continual spotter plane observation. This would have given the ship visibility on a clear day of about 60 miles; thus allowing her to avoid interception and give warning long before the enemy could have threatened.

D'Oyly-Hughes wrongly assumed that the carrier was in no danger and did not exercise adequate measures to protect his ships from unexpected attack. He was a hot-blooded man who had in prewar years, declared that given the chance he would take on a battleship with only the guns on his carrier. How he would achieve this with his 4.7 inch guns against a battleships 15 inch guns is questionable.

D'Oyly-Hughes frequently feuded with, and rejected the advice of, experienced airmen; refusing their urging to fly any reconnaissance or to form a Combat Air Patrol around the carrier and escorts. Therefore, no fighters or torpedo bombers were made ready for action, which is in total disregard of Fleet Air Arm doctrine. Being virtually defenceless, Glorious was an easy target for the tragedy that was about to unfold. Had aircraft been launched to give advance warning, Glorious certainly would have been able to spot incoming surface threats, and decide whether to run or fight.

But, by keeping the aircraft on deck and in the hangars, the captain denied himself these options. At the very least, Glorious should have been prepared to launch aircraft on short notice once German ships were detected; especially when neither of her escort destroyers were fitted with radar and the carrier had no lookout in her crow's nest.

Furthermore, British Intelligence at Bletchley Park had warned the Admiralty that wireless intercepts indicated that German heavy units were moving north into Norwegian waters. In one of the greatest blunders of the war, which resulted in a terrible loss of life, no alert signal was sent to the fleet. Surely, the broadcasting of a warning should have been of the highest priority!

Receipt of this information would have led naval command to deny Glorious' request to leave independently to Scapa Flow. However, by this stage of the Norwegian fiasco, the Admiralty had been lulled into a dangerous sense of complacency. The carriers Ark Royal, Furious, and Glorious had repeatedly made the 2 000 mile return trip to Norway with only a two destroyer escort. It would appear that the Admiralty took the safety of these valuable and vulnerable ships for granted.

In view of the important role played by aircraft carriers in World War Two, it is a deplorable fact that, almost to the last, the Royal Navy found itself shorter of these ships than of those of any other category. Yet, at the start of the war, it possessed five large carriers, HMS Ark Royal, Furious, Courageous, Glorious and Eagle; all having a speed of thirty knots or more.

Unfortunately, the Courageous was lost while on anti-submarine patrol in the Western Approaches, only a fortnight after war had been declared. It is the view of many naval air specialists that this exceptionally valuable ship had been thrown away through being assigned to duties she was unsuited for. It might have been imagined that after this, the utmost care would have been taken to provide adequate escort for any other large carrier force.

Shortly after 16 00 hours on 8th June 1940, the enemy battle cruisers Scharnhorst and Gneisenau were sighted and action stations sounded. On Glorious, belated attempts were made to get some of her aircraft ready for action. The Scharnhorst and Gneisenau both increased to full speed and opened fire at maximum range. Glorious would have had a better chance to escape by steaming directly downwind and away from the German ships. This would have made launching aircraft more difficult, though not impossible.

Although Glorious had no speed advantage over the Scharnhorst and Gneisenau; the decision to remain at reduced speed and on course was both unwise and inept. Desperately, the destroyer escorts tried to conceal the carrier in a smoke screen, which was quite effective and forced the Germans to temporarily cease firing. But the Germans had Glorious within range and bearing with their 11 inch main armament. The British ships were out gunned and out ranged; it was hardly a contest.

Glorious was hit by Scharnhorst's third salvo at the extreme range of 15 miles, one of the longest range hits ever recorded. The Ardent and Acasta steamed gallantly towards the enemy to attack. Acasta managed one hit from her 4.7-inch guns on Scharnhorst, but was riddled by German gunfire. Ardent also managed to hit the Scharnhorst but received multiple hits from the 5.9 inch secondary armament and sank.

Glorious received another hit in the centre engine room just after the Germans had recommenced firing. This shook the whole ship, caused a loss of speed and a starboard list. Glorious had commenced transmitting contact reports shortly after sighting the enemy and continued until the wireless station was disabled at about 17 20 hours. The flight deck of Glorious was penetrated, starting a large fire, and a further hit killed most of the bridge crew. Soon after this, the order was given to abandon ship, and she sank with a heavy list to starboard 17 40 hours.

Acasta proved to be a tough opponent for the German battle cruisers. Besides laying smoke to protect Glorious and making repeated torpedo and gun attacks; she scored several gun hits on Scharnhorst, causing damage to the much larger German vessel. Whilst Acasta was mortally wounded and sinking, Leading Seaman Carter, manning a torpedo tube, was determined to hit back. Though he had been knocked out briefly when a shell hit Acasta's engine room; Carter scrambled back into the control seat and fired the remaining torpedoes.

One of his torpedoes struck Scharnhorst aft, killing forty eight men and disabled the rear turret. Two of her engine rooms were flooded, which reduced Scharnhorst's speed to twenty knots. Carter jumped over Acasta's side and was picked up; he was the ships sole survivor. Acasta was finally sunk after about two hours of fighting; the battle flag of the Gneisenau was lowered to half-mast and her crew brought to attention to honour the brave fight of Acasta and her crew. The damage to the German vessels inflicted by Ardent and Acasta caused them to retire to Trondheim, allowing the safe passage of convoys evacuating troops from Norway.

Regardless of the heroism, British destroyer tactics are questionable. A coordinated attack by two destroyers would have been more effective than individual attacks. Nevertheless, a terrible ordeal was suffered by the pitifully few survivors of Glorious, Ardent, and Acasta. Although many of her crew survived to abandon the ship, communication errors meant the British were initially unaware of the sinking and the men were left for three days to die in the water.

Estimates place the number of crew from Ardent, Acasta and Glorious lost to exposure, rather than direct enemy action, at approximately eight hundred. As a result of the action, one thousand five hundred and nineteen British servicemen were killed, the greatest military loss of life for Britain up to that time in the war. Apart from the fact that aircraft carriers were extremely precious, the loss of the Glorious must be accounted as a sad waste of the lives of brave men; most of them highly professional and not easy to replace. The Royal Navy knew nothing of the sinking's until it was announced on the German propaganda radio.

A Norwegian ship on passage to the Faeroe Islands, picked up some survivors. Another Norwegian ship, also making for the Faeroes, picked up five survivors but was sighted by a German aircraft and forced to return to Norway. Those still alive became prisoners of war for the next five years. It is also believed that one more survivor from Glorious was rescued by a German seaplane.

With regards to the signals confusion; on 8th June the Royal Navy vessels in the Norwegian area had recently updated their signal frequencies. It is claimed that Glorious had not received information that she was to adjust her airway signaling to a different frequency. But at 16 50 hours, Gneisenau heard Glorious transmitting a sighting of the German ships.

There is no record of the escort destroyers sending any enemy report at all. This is inexplicable. Any suggestion that the destroyers assumed that Glorious had made the necessary reports can hardly be accepted. The destroyer Glowworm, sunk after an unexpected encounter with the German cruiser Hipper the previous April, continued to send transmissions until her radio equipment was disabled.

Another disturbing factor is that D'Oyly-Hughes was granted permission to proceed independently to Scapa Flow on the basis that he was low on fuel; but this was later established to be incorrect. The real reason was that a disagreement had earlier occurred between D'Oyly-Hughes and his Air Commander Heath. Heath had refused an order to carry out an attack against shore targets on the grounds that his aircraft were unsuited to the task, and the target had not been confirmed. Heath argued this was a complete misuse of naval aircraft. D'Oyly-Hughes had Heath placed under house arrest at Scapa Flow awaiting court martial, now he wished to return to attend the hearing rather than wait for the main convoy. His haste to leave the safety of the convoy to get back to port quickly to prepare and carry out the courts martial meant he condemned himself, his ships, and crews to death.

In the aftermath of battle, despite this notable German success, damage from the torpedo attacks forced Scharnhorst to return to Trondheim for emergency repairs. When later escorting Scharnhorst back to Germany, Gneisenau was torpedoed by the British submarine Clyde and it was not until 23rd June that she was able to reach the dry dock at Kiel. On 13th June, Fleet Air Arm Blackburn Skua bombers from Ark Royal attacked Scharnhorst in harbour. Only a single bomb struck her. But, she remained there under repair until the end of 1940

Curiously, neither side seems to have been satisfied with the outcome of the Glorious action. The Royal Navy had, of course, suffered a humiliating defeat. The disaster and the failure to mount an effective rescue was clearly a dismal failure on the part of the Royal Navy. However, upon his return to Trondheim, Admiral Marschall, the German commander, was relieved of his command. He had disobeyed specific orders; that is, to attack merchant shipping, and convoys in particular, not to endanger his ships, by attacking an aircraft carrier and warships.

It later became known that the heavy cruiser HMS Devonshire had passed within 40 miles of the action. Devonshire was flying the flag of Vice Admiral John Cunningham, who was carrying out his orders to maintain radio silence whilst evacuating the Norwegian Royal Family to the UK. Some surviving eyewitnesses from Glorious and Devonshire later testified that the sighting

report had been received by the Devonshire. But, that it had been suppressed by Cunningham, who departed at high speed in accordance with his orders, in full knowledge that Glorious would be sunk.

While under strict instructions not to break radio silence there is controversy over whether he received a distress call from the Glorious which was under heavy attack. If the message was not received, then why did he go to action stations at 16 25 hours and why was the original log book conveniently lost? In addition, eyewitnesses from Devonshire are adamant that Cunningham took steps to suppress the sighting signal.

Admiral John Cunningham should not be confused with Admiral Andrew Cunningham of Taranto fame.

They are not related.

With regards to the confusion over the use of wireless telegraphy frequencies on board Glorious; this may have contributed to the failure of other ships or shore-station receiving a sighting report. However, what is certain is that the absence of normal airborne patrols over Glorious and its attendant destroyers, in conditions of maximum visibility was most certainly a contributory factor to the disaster.

For the Admiralty, it was a chapter of muddle and confusion, all the more tragic when weighed against the gallantry of individual fighting men. Complacency led to a lack of any adequate heavy covering force.

In the first four weeks of the Norwegian campaign almost the whole of Royal Navy strength in home waters was engaged in escorting and carrying troops to and from Norway. This was done with such efficiency that not a single soldier out of the thousands transported lost his life as the result of submarine or surface ship attack. However, the majority of available Royal Navy destroyers were either sunk or put out of action in these operations. Obviously, too, the threat of an enemy invasion attempt on the homeland could not be ignored, thus, imposing a further burden.

It was in these circumstances that plans had to be prepared for the evacuation of Northern Norway. It was arranged that the forces should sail in four groups of convoys. So, when the Scharnhorst, Gneisenau, and four destroyers arrived on the convoy route on the night of 7/8th June, there were all the elements of impending tragedy. And tragedy, there indeed was.

In 1997, the BBC screened a documentary in its Secret History series entitled 'The Tragedy of HMS Glorious'. One of the survivors was interviewed. He had been a senior telegraphist on Glorious who spoke with conviction that he certainly did send out a signal of the attack and relayed her position accurately. This went unheeded, particularly by Admiral Cunningham, who later denied ever receiving any signal.

To try and reach a balance in this debate, firstly, on the evidence available, it appears more than likely that he deliberately abandoned the survivors, assuming he thought there might be any, to their fate. Secondly, that he deliberately suppressed the truth about signals which reached his ship about the fact that HMS Glorious was about to come under attack by the two German battle cruisers.

What is not made clear is that had Cunningham's cruiser gone to the aid of Glorious while the Germans were still in the vicinity, he would almost certainly have been sunk. This would have resulted in the loss of his precious cargo, e.g., the entire Norwegian royal family and the whole of the Norwegian Government which had chosen to fight on in Britain rather than to submit to the Germans. The moral effect of such a disaster would have made the loss of Glorious pale almost into insignificance. Had he neglected his primary duty to rescue the Norwegians, he would most assuredly have ended his career in disgrace.

This raises the issue of duplicity of which he has been accused. But, if the truth is that Cunningham deliberately chose to place the threat to the Norwegians ahead of any survivors of the Glorious; then one must consider the after-effects on Anglo-Norwegian relations if this knowledge had leaked out. The subsequent history of Anglo-Norwegian relations for the duration of the war (and afterwards) has been an enduringly positive one. Recalled and demonstrated each year as the Norwegians continue to make a gesture of remembrance in supplying the huge Christmas tree which is placed in the centre of Trafalgar Square.

Thus ended the Norwegian adventure with absolutely nothing achieved. Norway was in German hands, Hitler was assured of his iron ore and had won naval and air bases from which to operate against Britain. A brilliant reward for a daring and imaginative campaign; a campaign notable on the one side for the ruthless efficiency of the forcible occupation of a strictly neutral country; and the bold acceptance of a calculated risk of disaster to a fleet in the face of greatly superior force.

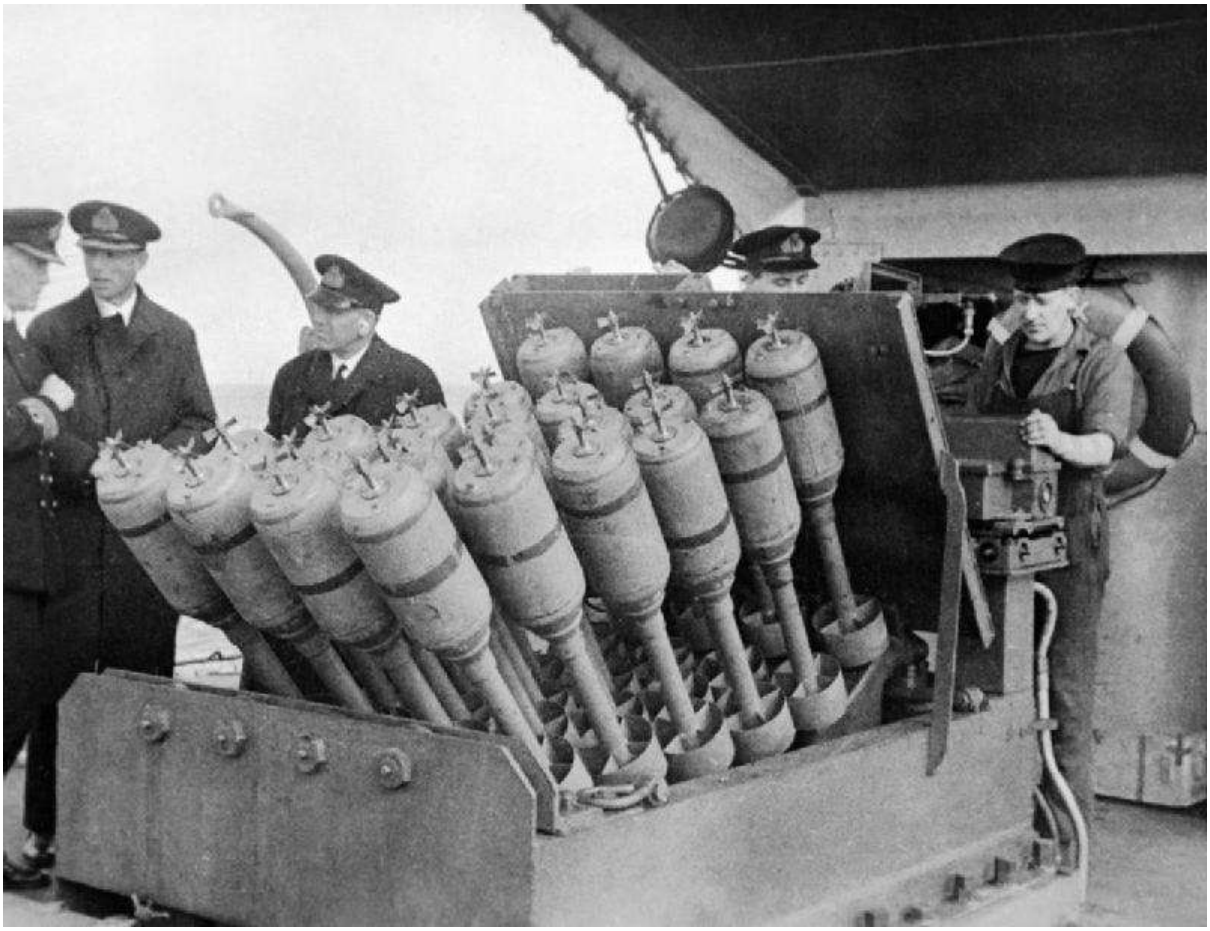
On the other for an amateurish lack of understanding of the effect of aerial domination upon an amphibious expedition and the failure through vacillation to use the sea power available to make an enemy pay the full price for his defiance of it.

The Phoney War had ended as Hitler's panzers rolled across France and Belgium, driving most of the British Army and a large part of the French into a coastal bridgehead at Dunkirk by 26th May 1940. But that is another story.

As a footnote; The Glorious is the only Royal Navy aircraft carrier to be sunk in World War Two in a surface action. No court martial was ever conducted for Heath, but he was kept out of the way for the duration of the war.

Both British destroyer captains were recommended for the VC. But this was refused, perhaps as part of the cover up. Instead they were briefly mentioned in despatches. The Admiralty never acknowledged the bravery of the crews, but the Germans were full of praise.

CHAPTER THREE



THE BATTLE of the ATLANTIC

Submarine warfare had some impact in World War One but became vastly more significant in World War Two as the German U-boat packs aimed to blockade Europe. Merchant ships took to

sailing in large convoys, protected by screens of destroyers and corvettes armed with depth charges and sonar. Daring U-Boat commanders carried out torpedo attacks within the defensive screen, and when several submarines attacked at once, the defenders had little chance of striking back. In the end, the Battle of the Atlantic was eventually won by technology. Radar to detect U-Boats from the surface, radio interception, and code-breaking all played a part. By the end of the war more than 3 000 merchant ships had been sunk, as well as almost 800 U-Boats.

The Battle of the Atlantic comprised the assault by the sea and air forces of Germany against the merchant shipping of Britain and her Allies. Control of the Atlantic Ocean was vital not only to the survival of Britain but also to the successful execution of the defeat of Nazi Germany. In this monumental struggle the U-boats introduced a powerful element of terror and diverted Allied effort into anti-submarine campaigns.

Admiral Karl Dönitz, commander of the U-boats, devised new tactics and strategies, the best known being that of the U-boat wolf-packs, where multiple submarines would stay close together, making it easier for them to sink specific targets. He achieved the highest standards of seamanship among his men and developed good man-management skills, remembering most U-boat captains by name. He ensured that crews had superior ration allocations and that they received a special operational pay allowance. When each U-boat returned from a patrol, he attempted to personally welcome home the crews and ensured that any decorational awards due to the crew were presented by him as soon as the boat docked. He arranged for a special luxury express train to ferry the crews back to Germany when they went on leave. The affection for his men was reciprocated in full by his crews, who referred to him as Uncle Karl.

The Battle of the Atlantic, which lasted from September 1939 until the defeat of Nazi Germany in May 1945, was the war's longest continuous military campaign. During six years of naval warfare, German U-boats and warships were pitted against Allied convoys transporting badly needed military equipment and supplies across the Atlantic to aid the survival of Great Britain. This battle to control the Atlantic shipping lanes involved thousands of ships and stretched across thousands of perilous miles of ocean.

Although unable to challenge the Royal Navy in regard to surface ships, the German Navy (Kriegsmarine) overseen by Grand Admiral Erich Raeder employed a mix of surface raiders and Uboats. Though he favoured the surface fleet, Raeder was urged by Dönitz, to use U-boats as the main naval weapon. Initially ordered to seek out British warships, Dönitz's U-boats had early

success sinking the old battleship HMS Royal Oak, docked at Scapa Flow and the aircraft carrier HMS Courageous, off the Irish coast. Despite these victories, he vigorously advocated using hunting groups of U-boat wolf-packs to attack the Atlantic convoys.

Other instruments used in the conflict were specially selected merchant ships which were powerfully armed and skilfully disguised to act as commerce raiders. These were very soon joined by aircraft and minelayers (both airborne and seaborne). Sometimes one instrument acting in conjunction with another and sometimes each acting independently.

The German surface raiders scored some early successes, and drew the attention of the Royal Navy who sought to destroy them or keep them in port. Well before the outbreak of war on 3rd September 1939, the Germans sent out into the Atlantic two of their powerful 'pocket battleships', the Deutschland (renamed Lützow in November 1939) and the Graf Spee. The Deutschland's cruise accomplished little, and she was recalled after sinking only two ships in three months. The Graf Spee ranged the oceans far more widely and captured or sank 9 ships (50 000 tons) before she was trapped by three British cruisers off the River Plate on 13th December 1939, and scuttled herself. The pocket battleship Admiral Scheer made a successful sortie in the Atlantic between October 1940 and April 1941 and got home safely after accounting for 16 ships (99 059 tons). The heavy cruiser Hipper, a short endurance ship, made two comparatively brief cruises in 1940 and 1941, but found only nine victims (40 078 tons). By far the most successful of the warship raiders were the battle-cruisers Scharnhorst and Gneisenau (32 000 tons displacement) which cruised in the north and mid-Atlantic between January and March 1941, sinking 22 ships (115 622 tons), thereby, seriously disrupting the entire convoy system before returning safely to Brest, in occupied France, thus posing a constant threat to Atlantic shipping.

The peak of warship raiding came, however, with the sortie of the giant battleship Bismarck (42 345 tons displacement) and the heavy cruiser Prinz Eugen in May 1941, which resulted in the sinking of the British battle cruiser Hood in the Battle of the Denmark Strait on the 24th May. This was followed by a dramatic pursuit by the Home Fleet and other forces, which ended three days later when the Bismarck was sunk almost within reach of air cover from western France. This sortie, though in British eyes menacing in the extreme, achieved nothing against merchant shipping; and its outcome made the Germans unwilling to risk their heavy warships in further Atlantic operations. In February 1942, the Scharnhorst, Gneisenau and Prinz Eugen escaped home up-Channel from Brest in a skilfully planned and executed dash. Thereafter, the large

German warships were only employed occasionally against the Allied convoys to Russia, whose protection was a British responsibility.

With the fall of France in June 1940, Dönitz gained new bases on the Bay of Biscay from which his U-boats could operate. Spreading into the Atlantic, the U-boats were supported by Focke-Wulf 200 Condor aircraft which aided in finding Allied ships as well as attacking them. Through the remainder of 1940 and into 1941, the U-boats enjoyed tremendous success and inflicted heavy losses on Allied shipping. As a result, it became known as the 'Happy Time' among the U-boat crews. As technology evolved, the Kriegsmarine produced many different types of U-boats. Most notable are Type VII, known as the 'workhorse' of the fleet, which was by far the highest number produced. Type IX boats were larger and specifically designed for long-range patrols, some journeying as far as Japan. .

The Germans organized and trained their air force (Luftwaffe) primarily for close support of the army, and had, relatively speaking, ignored both strategic bombing and cooperation with naval forces. Moreover, Reichsmarschall Göring's selfish insistence that 'everything that flies belongs to me' frustrated any possibility of the Kriegsmarine creating its own air arm. Relations between the higher ranks in the Luftwaffe and the navy were notoriously bad, and remained so virtually throughout the war. In the early months, German aircraft were used occasionally to reconnoitre British naval bases, and locate units of the Home Fleet at sea. A few were employed on mine laying, and it was not until the opening of the Norwegian campaign in April 1940 that the Luftwaffe began to exercise substantial influence on the war at sea. That 'ramshackle campaign', as Churchill described it, did however, prove that within the comparatively short range of the Ju 87 dive-bombers and the longer-range Ju 88, Do 17 and He III bombers, British naval forces could not operate successfully in coastal waters without fighter cover; and off Norway that cover was almost completely lacking. The heavy losses inflicted on supply convoys and on their escorting warships, taught the British a harsh lesson, a lesson which was to be driven home even more harshly after the German conquest of the Low Countries and France. Convoys passing through the English Channel, up and down the east coast, all came within range of German shore-based bombers.

The grievous shortage of escort vessels was much aggravated by the heavy losses suffered in the evacuations from Norway and France. This, combined with the preoccupation of RAF Fighter Command on the defence of the homeland and the lack of fighter aircraft in Coastal Command, rendered such targets as the slow-moving coastal convoys invitingly easy. It is

therefore, not surprising that during the second half of 1940 the German dive-bombers inflicted heavy losses on British coastal shipping.

Gradually however, Fighter Command accepted the need to defend offshore shipping. Emergency measures such as the diversion of as much shipping as possible to the north of Ireland and to west coast ports, eased the situation. The creation of specially trained anti-aircraft crews to join merchant ships during the most dangerous parts of their passages, and the instruction of merchant seamen in the rudiments of self-defence against air attack bore fruit. The losses inflicted by enemy aircraft in 1940 totalled 192 ships (580 074 tons), but a large proportion of them were suffered during the evacuations already mentioned.

Throughout the war an arms race evolved between the Allied navies and the German Kriegsmarine, especially in detection and counter-detection. Sonar (ASDIC) allowed allied warships to detect submerged U-boats but was not effective against surfaced vessels; thus, early in the war, a U-boat at night or in bad weather was actually safer on the surface. Advancements in radar became particularly deadly for the U-boat, especially once aircraft-mounted units were developed. As a countermeasure, U-boats were fitted with radar warning detectors, to give them ample time to dive before being attacked. However, the Allies switched to centimetric radar which rendered the radar detectors ineffective.

In 1941 the Focke-Wulf four-engined Condor began to make sorties from western France much farther out into the Atlantic in order to report convoy movements to the U-boat command headquarters at Lorient, and to attack merchant ships themselves far outside the range of British shore-based aircraft. Thence arose the need for convoys to carry their own fighter defences along with them. As the navy had no escort aircraft carriers, improvisation was once again necessary. It took the form of converting a number of merchant ships (19 in all) to carry a few aircraft. These became known as merchant aircraft carriers

(MAC's). Others were fitted with a catapult from which a Hurricane fighter could be launched and called catapult aircraft merchantmen, or CAM's. A third type, known as fighter catapult ships (FC's), was also produced. They were of course 'one-shot weapons', and the pilots of their Hurricanes, once they had been catapulted, had to parachute into the sea or ditch in the hope of being picked up by one of the escorts. Everyone realized, however, that these hazardous and demanding improvisations were no more than stop-gap measures, and that the real need was

for small aircraft carriers which could provide continuous air escort throughout the convoys' voyages; but time was needed to build such vessels and train their aircrews, and in 1940-41 the pressure on the building yards was so heavy that the British had to rely chiefly on the United States to produce such vessels. Nonetheless the improvisations described above did check the depredations of the Focke-Wulfs.

To counter improvements in British operations, Dönitz pushed his wolf-packs further west forcing the Allies to provide escorts for the entire Atlantic crossing. United States President Franklin Roosevelt countered by extending the Pan-American Security Zone nearly to Iceland. Though neutral at the time, the US provided escorts within this region. Despite these improvements, U-boats continued to operate at will in the central Atlantic outside the range of Allied aircraft. This ‘air gap’ posed serious issues until more advanced maritime patrol aircraft arrived.

Other elements that aided in stemming Allied losses were the capture of a German Enigma code machine and the installation of new high-frequency direction-finding equipment for tracking U-boats. With the US entry into the war after the Japanese attack on Pearl Harbor, Dönitz dispatched U-boats to the American coast and Caribbean under the code name ‘Operation Drumbeat’. The U-boats began enjoying a second ‘happy time’ as they took advantage of unescorted American merchant ships as well as the US failure to implement a coastal black-out.

As losses mounted, the US eventually implemented a convoy system in May 1942. With convoys operating on the American coast, Dönitz withdrew his U-boats back to the mid-Atlantic that summer. Losses continued to mount on both sides as the escorts and U-boats clashed. In November 1942, Admiral Sir Max Horton became commander-in-chief of the Western Approaches Command. As additional escort vessels became available, he formed separate forces which were tasked with supporting the convoy escorts. As they were not tied to defending a convoy, these groups were able to specifically hunt U-boats.

The event which undoubtedly had the greatest influence on the air side of the Atlantic battle, and which brought about a sharp fall in the losses inflicted by German bombers, was Hitler's invasion of Russia on 22nd June 1941. The opening of the gigantic land campaigns on the Eastern Front necessitated large-scale diversion of Luftwaffe squadrons from Western Europe. The autumn of 1941 saw the first proper escort carrier (a German merchant ship which had been captured and converted) enter service. Though she was soon sunk by a U-boat her

performance wholly confirmed the view that such ships provided the required solution. However, the need to employ the first generation of escort carriers to cover the North African landings in November 1942 prevented them joining in the Atlantic battle until early 1943. The success they then achieved fully justified the confidence placed in them. The heavy losses suffered by some Arctic convoys - notably by PQ 17 in July 1942 when the Admiralty unwisely ordered it to scatter and the escorts to withdraw in anticipation of attack by the powerful German naval and air forces based in Norway, accounted for a large proportion of the losses. By the end of 1942 such losses had dropped sharply. This improvement was attributable chiefly to the increasing number of escort vessels and of improved weapons entering service as American production got into its stride. Thus the strength available to the Western Approaches and Coastal Commands steadily grew, and the training of the escort groups and aircrews improved.

The German mine laying campaign started with the outbreak of war, when their magnetic mine found the Royal Navy unprepared - despite the fact that the British had themselves produced and laid mines of that type towards the end of World War One. In 1939 British minesweepers were only equipped to deal with moored mines, and the magnetic mine thus inflicted substantial losses during the early months and produced a serious situation by forcing the temporary closure of many harbours and offshore channels. However, by October 1939 the necessary antidote in the form of magnetic minesweepers had been produced and all warships and merchantmen were demagnetized to give them a measure of self-contained immunity. In 1939 Allied losses to mines totalled 78 ships (262 542 tons) and in the following year 201 ships (509 889 tons). Not long after the magnetic mine had been mastered the Germans began to lay a different variety, which was detonated by the sound waves produced by a passing ship; but the Admiralty had anticipated such a development and had designed the necessary counter-measure, with the result that the acoustic mine never achieved results commensurate with the magnetic mines of the early months. The production of many variations of the magnetic and acoustic mine, or of a combination of the two, initiated the struggle between enemy minelayers (which might be surface ships, U-boats or aircraft) and Allied minesweepers which was to last throughout the war.

The ingenuity and persistence with which the Germans executed their mine laying campaign forced on the Allies a very great minesweeping effort, and a large number of the little ships which toiled to keep the channels clear were destroyed by the mines they were endeavouring to sweep. After 1941 the actual merchant ship losses suffered were comparatively small: 51 ships

(104 588 tons) in 1942, thirty seven ships (108 658 tons) in 1943, twenty-eight ships (95 855 tons) in 1944 and the same number (93 663 tons) in the last year of the war. The most serious threat after the magnetic mine of 1939 actually arose in 1944, when the Germans produced a pressure-operated mine and laid it in the channels and harbours used by the ships supporting the invasion of Normandy. Though the Allies never managed to produce a sweep capable of exploding such mines harmlessly, precautionary measures, such as steaming at slow speed, and complete air supremacy enjoyed by the Allied air forces, prevented this new type of mine from becoming a serious threat.

But, it was the U-boat campaign that constituted by far the greatest threat to Allied control of the vital shipping routes and inflicted the greatest losses. Prime Minister Winston Churchill wrote “The only thing that really frightened me during the war was the U-boat peril". Though the instruments already described were certainly not negligible in their influence, it is no exaggeration to say that the Battle of the Atlantic was chiefly fought between the U-boats and Allied (and in particular British) surface convoy escorts and aircraft. One clear lesson of World War One was that the convoy system was much the most effective strategy against submarine attacks; and the fact that it saved Britain from disaster in 1917 was not forgotten between the wars. The Admiralty always insisted that if another war broke out merchant ships not capable of steaming at a fairly high speed must be sailed in convoy - despite all the well-worn arguments against doing so. However, as the probable influence of air power became clearer in the 1930’s, the Air Ministry, in reviewing the part that the RAF should play in war, argued that to mass ships into convoys would present enemy aircraft with easier targets and so opposed the introduction of the convoy system.

Not until nearly the end of 1937 did the Air Staff accept that such a system should be introduced, and allocate a large proportion of the strength of Coastal Command to convoy escort duty. On the Admiralty's side the invention in the early 1920’s of the ASDIC submarine detection device (called SONAR by the U.S. navy) proved over optimistic. Certainly ASDIC was a very valuable development; but it did not, as the Naval Staff argued as late as 1937, by itself mean that the submarine threat had been mastered. Furthermore, the Admiralty long held that as the various naval treaties signed between the wars had forbidden unrestricted submarine attacks on merchant ships. Nazi Germany had become a party to those arrangements in 1935. This was presented to avoid a campaign such as had brought Britain to the verge of defeat in 1917 from being repeated. Fortunately this illusion in naval circles was dissipated at about the

same time as the adoption of the convoy system was agreed by the Air Ministry. In 1938 the Admiralty accordingly set about the difficult task of organising the worldwide control of merchant shipping which would fall to its lot in war, and started to create the administrative machinery necessary to put shipping into convoy - initially only on the most important routes, namely those crossing the Atlantic. But the actual introduction of convoys, even on a limited number of routes, was bound to take time. Therefore, for some months after the outbreak of war many ships were still sailing independently, even in the most dangerous waters. Furthermore the Allies did not possess sufficient escort vessels and aircraft to give convoys the necessary protection - except at the very end of a homeward journey or the beginning of an outward one; and such strength in escort vessels as they did possess was too often wasted by sending ships and aircraft out to hunt for U-boats instead of using them to escort convoys.

The British had a major advantage in their ability to read some German naval Enigma codes. Codebooks and equipment were captured by raids on German weather ships and from captured U-boats. A team including Alan Turing used special purpose ‘Bombes’ and early computers to break new German codes as they were introduced. The speedy decoding of messages was vital in directing convoys away from wolf-packs and allowing interception and destruction of U-boats. This was demonstrated when the German naval Enigma machines were altered in February 1942 and wolfpack effectiveness greatly increased until the new code was broken.

The conception that the convoy system was a 'defensive' strategy and therefore inferior to 'offensive' measures such as hunting was very long-lasting, and found a powerful supporter in Churchill as First Lord of the Admiralty. In the Air Ministry the doctrine that strategic bombing was the primary function of an air force and the only answer to enemy bombing was equally enduring; and the Air Staff remained markedly reluctant to reduce its bombing effort in order to provide convoy air escorts. Taken together these false arguments and stubbornly held convictions resulted in the U-boats finding large numbers of comparatively easy targets in 1939-40 among ships sailing independently or in weakly escorted convoys. By the Anglo-German Naval Agreement of 1935 Germany was allowed to build a tonnage of submarines equal to Britain's if she herself considered it necessary, and on the outbreak of war she actually possessed 56 U-boats. Thirty of them, however, were of a small coastal type suitable only for use in the North Sea. By the end of August 1939, thirty-nine U-boats had put to sea to take up their war stations; but only 17 of them were of the ocean-going type. Their orders were to obey 'for the present' the rules laid down in international law governing attacks on merchant ships;

but the sinking of the British liner Athenia on the day war was declared showed that unrestricted submarine warfare had begun and strengthened the Admiralty's conviction that the strategy of shipping defence had to be primarily based on the convoy system. In fact homeward-bound convoys from Halifax, Freetown (Sierra Leone), Bergen (Norway) and Gibraltar, and outward convoys from the Thames ports, Merseyside, and the Clyde, as well as coastal convoys between the Thames and Firth of Forth, were all started between September and October 1939.

Though anti-submarine escorts based in British ports (including those in Northern Ireland) and in Halifax could only remain with their charges for about the first 400 miles of their trans-Atlantic voyages the results of the first phase of the struggle (September 1939 to May 1940) were not unfavourable to the Allies. After inflicting comparatively heavy losses in September and October 1939, when many ships were still sailing independently, the U-boats did less well until the cataclysmic month of June 1940; and they themselves suffered quite heavily, losing no less than 24 of their number from various causes.

The German occupation of Norway in April and May 1940, followed quickly by the conquest of the Low Countries and France, caused the pendulum of the Battle of the Atlantic to swing very strongly in favour of the Germans; not only had the Royal Navy suffered heavy losses of destroyers and smaller ships in the evacuations, but the U-boats were now able to use bases in Norway and France, so enabling them to reach much further out into the Atlantic and increase the duration of their patrols. Furthermore, new production, though not yet on the massive scale achieved later, had sufficed to replace losses. During their first 'happy time', the so-called 'Aces' Prien, Kretschmer, Endras, Frauenheim, Schepke, Lemp and others - made their names. They operated independently and generally attacked at night while on the surface. The graph representing Allied shipping losses rose steadily and steeply until October 1940.

The second winter of the war saw a slight improvement, which can confidently be attributed to the gradual increase in the number of surface escorts as ships damaged in the evacuations of 1940 returned to service. Churchill's 'destroyers for bases' deal with the Americans, whereby 50 of the oldest American destroyers (of World War One vintage) were transferred to the Royal Navy in exchange for the use of sea and air bases in the western hemisphere, helped to mitigate the shortage of escort vessels. Moreover, despite the heavy sinking’s of merchant ships, there were several encouraging instances in which well-trained escort vessels,

sometimes working in conjunction with shore-based aircraft, struck back hard and successfully at the U-boats. Between October 1940 and March 1941, Dönitz gradually introduced new tactics. The number of boats available to him enabled him to replace the single-handed work of the `Aces' by coordinated attacks by a group of U-boats controlled from his own headquarters at Lorient. The system employed was that the first U-boat to sight a convoy would report its position, course and speed by wireless, whereupon the closest supporters would be ordered to join the sighting boat, whose duty it was to keep in touch with the convoy.

When the `wolf pack' had assembled, Dönitz would order it to begin attacks, operating on the surface, undetected by ASDIC. The British reply was therefore to try and turn night into day by the use of illumination, so forcing the U-boats to submerge, break off their attacks, and perhaps offer a target to the escort vessels, which could now detect them. The fitting of searchlights (called Leigh lights after their inventor Squadron-Leader H. de V. Leigh) in Coastal Command aircraft was another development which helped to counter the wolf pack threat, and later became a vitally important instrument. The most promising new counter-measure was the introduction of short-wave radar sets which could detect a surfaced U-boat and could be fitted in escort vessels and aircraft. The fitting of these sets began early in 1941, and the British commands and authorities involved in the Atlantic battle at once gave their production high priority - because the new radars, used in conjunction with the Leigh light or sent up from surface ships, filled the yawning gulf produced by the uselessness of the Asdic against U-boats operating like torpedo boats on the surface.

At the time when the campaign by the wolf packs in the north-western approaches to the British Isles was at its height, the Admiralty made an important change in the shore organization which controlled and directed the Atlantic battle, namely the Western Approaches Command. Its headquarters were shifted from Plymouth, where they had been situated since the beginning of the war, to Liverpool. There the naval authorities were in much closer touch with No.15 Group of Coastal Command. In the same month of February 1941 Admiral Sir Percy Noble took over the Western Approaches Command, and it was he who extended the practice of forming groups of escort vessels, which would as far as possible always work together. He also invigorated the training of key officers and men serving in those ships, and created improved coordination between the naval and RAF headquarters and units involved in the struggle. In April 1941, operational control of Coastal Command aircraft was transferred to the Admiralty, thus establishing unified responsibility at the summit of the command organization, and in November

of the following year Admiral Sir Max Horton, a former submarine specialist who had achieved great distinction in World War One and thoroughly understood the capabilities and limitations of such vessels, took over the Western Approaches Command. Though he reaped much that his predecessor had sown he was the ideal opponent to pit against Dönitz, and he held that command until the end of the war.

Throughout the first half of 1941 Allied losses remained high, averaging 44 ships (241 930 tons) per month; but the shorter nights of summer and the new developments already mentioned brought a substantial reduction during the second half, which produced average losses of only 28 ships (120 027 tons) per month. Furthermore, the losses inflicted on the U-boats rose from12 in the first six months to 23 in the second six months; and March 1941 produced the end of the dominance of the U-boat 'Aces' when the boats commanded by Prien, Schepke and Kretschmer were all destroyed. In May these successes were reinforced by the capture of Lemp's command boat U-110, and although she sank while being towed into port her captors' search of her after she had been abandoned by her crew produced material of priceless value to the Allied intelligence and cryptographic organizations. U-559 was also captured by the British in October 1942; three sailors boarded her as she was sinking, and desperately threw all the code books out of the submarine. Two of them, Able Seaman Colin Grazier and Lieutenant Anthony Fasson continued to throw code books out of the ship as it went under water, and they went down with it. The summer of 1941 also saw a great extension of the convoy-south routes between Freetown and Gibraltar and British home ports.

In May 1940, when the loss of the whole of Norway was plainly imminent, British forces were sent to occupy key points in Iceland, whose geographic position made it an ideal place to establish naval and air bases from which the north Atlantic could be covered. Between that date and April 1941 the Allies developed the air and sea escort system which was, with only minor modifications, to last until the end of the war. Early in July 1941 American forces took over responsibility for the defence of Iceland - despite the fact that their country was still technically neutral. Once the bases in Iceland had been developed a homeward-bound convoy from the assembly ports of Halifax (for fast convoys) and Sydney, Cape Breton Island (for slow convoys), would be protected by the Newfoundland Escort Force, based on St John's, as far as a Mid Ocean Meeting Point (MOMP) at about thirty-five degrees west. There an Iceland-based force would meet the convoy and assume responsibility for its safety until it reached the Eastern Ocean Meeting Point (EASTOMP) at about eighteen degrees west. The convoy would then be

met by a Western Approaches escort force sent out from the Clyde or Northern Ireland for the final stretch of its homeward journey. An outward convoy would of course be given similar protection by groups working in the opposite direction.

Continuous escort across the North Atlantic in both directions and also on the north-south route thus became possible in July 1941, and was thereafter maintained until the end of the war. Unfortunately there was in the middle of the north Atlantic an 'air gap' about 300 miles wide which could not be covered by shore-based aircraft working from Newfoundland, Iceland, or Northern Ireland; and another, though less important, 'air gap' existed on the north-south route to the east of the Azores. It was in the 'air gaps' that the U-boat packs concentrated their efforts in the next round of the struggle.

The first campaign on the convoy routes, which may be taken as starting with the introduction of wolf packs towards the end of 1940 and ending with the disastrous events of December 1941 in the Pacific, may reasonably be described as a stalemate. Although the U-boats inflicted heavy losses (432 ships totalling over two million tons in 1941) the British and Canadian navies had developed an efficient interlocking convoy system right across the north Atlantic; the training of escort groups and cooperation between them and shore-based aircraft had improved greatly; and technical developments such as the Leigh light, short-wave radar, heavier depth charges and ahead-throwing anti-submarine weapons promised well for the future. Yet these favourable trends did not prevent the U-boats achieving a second peak of success in the next phase. Ever since the crisis of 1940, American 'observers' had been serving in all the major British naval commands, and given the benefit of virtually all the British war experience and technical developments. Nevertheless, the Japanese attack and German declaration of war on the United States found the U.S. navy ill prepared in many respects - and perhaps especially in the defence of the merchant shipping off the American eastern seaboard. The U.S. navy was not convinced that the allegedly 'defensive' strategy of convoy and escort was the proper means both to defend the merchant ships and to create opportunities to counter-attack its assailants, and preferred to rely on hunting and patrolling - on which the British had in fact wasted considerable effort during the early months of the war. Nor was Dönitz slow to seize the opportunity to attack the stream of ships, which included a large proportion of precious oil tankers, passing between the Caribbean Sea or Gulf of Mexico and the terminal ports on the east coast.

The result was to produce what the U-boat commanders described as their 'second happy time', and to encourage Dönitz and his staff to believe they could achieve the target of sinking 700 000 tons of shipping per month - which they had always estimated to be the figure necessary to bring Britain to her knees. Fortunately for the Allies, other commitments, especially in the Mediterranean, severely restricted the number of boats Dönitz could send to the new battleground, and it was not until the beginning of 1942 that the first 6 sailed there from western France; but they were enough to produce a holocaust. In January U-boat sinkings rose to 62 ships (327 357 tons) and the U-boats' accomplishments rose steadily month by month until they reached their target of just over 700 000 tons (144 ships) in June. A large proportion of those sinkings took place in waters where the British Admiralty had no authority, and they included many ships which had survived the perils of the Atlantic crossing. The Admiralty could do little except send out what reinforcements it could spare and urge the US navy to adopt a convoy system. They were urged to adopt the British system of shipping control and the collection and dissemination of intelligence regarding U-boat movements which had been so successfully developed in the Submarine Tracking Room deep down in the shelter beneath the main Admiralty building. But it was not until April that the Americans adopted even a partial convoy system.

Dönitz very naturally did his utmost to benefit from this state of affairs. He extended the time his boats could stay on patrol by sending out submarine tankers (`milch cows') to replenish them; and in February he extended his onslaught to the Caribbean, where the U-boats found many ships, and especially tankers, sailing unescorted. For the first half of 1942 Allied losses to U-boats averaged 97 ships (508 143 tons) per month and for the second half 95 ships (530 047 tons) per month - a rate of loss which, unless checked, spelt disaster to the entire Allied cause. However, by the middle of the year northbound and southbound convoys had begun to sail up and down the American eastern seaboard, and the U.S. navy thereafter steadily developed an interlocking convoy system until it covered the whole area from the St Lawrence River estuary to the coast of Brazil. Dönitz's response was to send some of his long-range U-boats further afield to waters where they could still expect to find unescorted targets, and in October they appeared for the first time off the Cape of Good Hope and in the southern Indian Ocean. There they inflicted substantial losses on the vital troopships and supply traffic to the Middle East theatre. But he redeployed his main strength, still using wolf pack tactics, against the north Atlantic convoy routes, where the battle was renewed with rising intensity for the last four months of 1942 and heavy losses were inflicted.

When Grand Admiral Erick Raeder resigned after a disagreement with Hitler in January 1943, Karl Dönitz was appointed Grand Admiral of the German Navy. Ironically, this coincided with the Casablanca Conference where the defeat of the U boat was given top priority by the Allies. The most visible example of this was the bombing of their bases on the Bay of Biscay. However the bombs were unable to penetrate the seven metre thick U-boat pens that housed them and consequentially few boats were destroyed.

Not until December 1942, was there a substantial drop in the tonnage sunk, although 87 U-boats were sunk by one means or another. The German rate of production far outstripped their losses. Despite the potentially disastrous developments in the Battle of the Atlantic, the Allies did achieve one outstandingly important success; the safe transport from Britain and the USA of the huge military and supply convoys carrying the forces organized to launch the amphibious expeditions of Operation Torch against the Germans in Morocco and Algeria on 7th November, 1942. Though no losses were suffered while on passage, and complete strategic surprise was achieved, the necessary escorts could only be provided at the expense of the north Atlantic mercantile convoys. In some degree therefore the heavy losses suffered by the latter may reasonably be attributed to the priority given to the safety of the ships carrying the forces destined for the landings in North Africa. The unfavourable trend in the Atlantic battle in 1942 brought to a head the clash between the Naval and Air Staffs over strategy and priorities. The former held that, as the Allies certainly could not launch a second front until control of the sea routes was reasonably secure, and would equally certainly be defeated if such control were decisively lost, the correct strategy must be to concentrate first on winning the Battle of the Atlantic - and that meant that Coastal Command must be given sufficient long-range reconnaissance bombers to enable it to provide air escorts throughout the convoys' voyages in both directions. The Air Staff, however, argued that as the bombing of Germany was the only possible 'offensive' strategy for the time being, as it assisted in the Atlantic battle by disrupting U-boat production, and as it made an important contribution to the support of the embattled Russian armies, nothing should be done to weaken the Allied bombing effort.

When the new short-wave (ten-centimetre) radar sets became available for service at the end of 1942 the debate grew sharper, since the instruments which would make bombing far more accurate used many of the same components as those which would enable a surfaced U-boat to be detected from the air at night or in low visibility. The clash over priorities was repeatedly brought before the high-level service and ministerial committees responsible for British war

strategy. The final decisions, taken by Churchill in October, were that no large-scale diversion of aircraft from Bomber to Coastal Command should be made, that the need to close the Atlantic 'air gap', to which the Naval Staff rightly attached such great importance, should be met by obtaining long-range aircraft from the USA, and that Bomber Command should have priority for the new radar sets.

By 1943, Germany's manpower was stretched to the limit and although Albert Speer's construction programme replaced lost and damaged boats, the training period for new replacement crews was shortened in an attempt to keep pace with the expansion of the U-boat fleet. This resulted in boats putting to sea with largely untrained crews. The Battle of the Atlantic was now at its peak with U-boats attacking hundreds of merchant ships and their escorts. During a three week period, the German navy cryptographic section, known as B-Dienst had deciphered 175 Allied radio signals. Some signals revealed that two eastbound convoys had left New York three days apart. These vessels contained vital war munitions and foodstuffs. On 12th March, Dönitz ordered the largest concentration of U-Boats ever to be deployed. It comprised of three groups. The first was to patrol north-eastward off the Newfoundland coast, and the other two groups forming picket lines some two to three hundred miles wide in the mid-Atlantic, a gap that lay beyond the reach of land based Allied aircraft.

In the predawn darkness of 16th March 1943, the two convoys had so far remained undetected. However, the quartermaster on U-653 saw a brief flash of light directly ahead. This U-boat was returning homeward on the surface and found herself in the middle of a convoy. She was low on fuel, had a defective diesel engine and only one remaining torpedo. U-653 radioed Naval Headquarters, which in turn ordered all the U-boats from the three groups to converge on the convoy. A total of 21 ships totalling 141 000 tons were sunk. The British Admiralty stated that "the Germans never came so near as to disrupting communication between the New World and the Old as in those first twenty one days of March 1943".

However, British intelligence at Bletchley Park had once again broken the ciphers of the Enigma code machines and could determine where Dönitz was ordering his U-boats. Since November 1942, British Naval Intelligence had been unable to decrypt any Enigma messages between the U-boats and their control and command centre. This was as a result of the Germans changing from a three wheel to a four wheel Enigma key which quadrupled the possible rotor sequences. Although the British code breakers working with new electronic machines managed to solve this problem, they were not in time to prevent the debacle of many convoys at sea. German Naval

Intelligence were unaware that their communications were compromised, and U-boat operational orders were read by the Allies.

By the beginning of 1943 the number of escort vessels available to the Western Approaches Command had risen appreciably, and the Canadian navy was bearing an increasing share of the burden in the Atlantic. In March 1943 the Western Approaches Command was at last able to organize a number of support groups which could be diverted to reinforce the escorts of threatened convoys, and some of which included an escort carrier. On the other hand the Germans were still producing new and improved U-boats much faster than they were being sunk. Thus, all the signs were that, as the weather improved with the approach of spring, the battle on the convoy routes would be renewed with increased fury.

The first two months of 1943, during which the weather was almost continuously stormy, produced something of a lull and losses on both sides were comparatively slight. Then in March Dönitz mounted a prolonged and vigorous onslaught by 40 U-boats against a slow convoy from Sydney, Cape Breton Island, and a faster one from Halifax (respectively called SC 122 and HX 229) which joined together in mid-Atlantic and totalled 100 ships. The main battle took place in the notorious 'air gap', and although reinforcements were sent out from Iceland and other bases the U-boats sank 21 ships (141 000 tons) for the loss of only one of their number. That month the total sinkings by U-boats shot up to 108 ships (627 377 tons), which was nearly as high as the worst months of 1942. Plainly a crisis was imminent. It came in late April and early May, 1943, when Dönitz concentrated about 60 U-boats working in four groups against a slow outward convoy, 0NS 5.

Fortunately for the Allies a squadron of 'Very Long Range' Liberators had by that time joined the Coastal Command forces working from Iceland, and they and a support group sent out from St John's played a vital part in the battle which was fought throughout a week of very stormy weather. Though 12 of the convoy were sunk, the sea and air escorts destroyed 7 U-boats. In the next convoy battle the U-boats achieved only slight successes and again suffered heavily. Then in mid-May the wolf packs were decisively defeated in attacks on two homeward convoys (HX 237 and SC 129), to which support groups including escort carriers were diverted. On 22nd May, Dönitz recalled the survivors and silence fell on the battle area. In fact, no fewer than 33 U-boats had been sunk since the first of the month; and by the end of it the total had risen to forty one.

This victory was decisive. Never again did a comparable threat to the Atlantic life-line arise; and it is now plain that the victory was won by the escort and support groups sent out with the convoys, by the escort carriers, aircraft and by Coastal Command's tiny force of Very Long Range aircraft; and of all the weapons and devices which they employed the ten-centimetre radar sets were without doubt the most important. A share of the credit for the victory must also be given to the Admiralty's Submarine Tracking Room, which successfully plotted the U-boats' movements and despatched sea and air reinforcements to the precise points at which they were needed. Between January and May 1943 Allied losses totalled 314 ships (1 782 628 tons), which was still too high for comfort; but no less than 96 U-boats were sunk in the same period - a rate of loss which simply could not be sustained. Such in brief outline was the result of the phase we may justly call the 'Triumph of the Escorts'.

The defeat suffered in May 1943 did not cause Dönitz to throw-in the towel, and he continued to send groups of U-boats from bases in Germany and western France to distant waters, where for a time they achieved some success. To counter these movements a joint Navy-Coastal Command offensive against the U-boats' transit routes through the Shetlands-Faroe Islands channel and across the Bay of Biscay was organized. The Coastal Command aircraft involved were by this time mostly equipped with ten centimetre radar and Leigh lights. The combination of the two proved lethal on many occasions, since they enabled the aircraft to catch by surprise a U-boat which was surfaced and charging its batteries at night. The Biscay offensive proved far more rewarding than that against boats passing through the northern transit area. It reached a climax between 1st July and 2nd August 1943 when twenty U-boats were sunk and many others forced to turn back. At about, the same time American escort carriers struck hard and successfully against the 'Milch Cows' off the Azores. All in all the period from 1st June to 31st August 1943, was a very unhappy time for Dönitz and his crews. Their achievements averaged no more than 27 ships (144 628 tons) a month, mostly sunk in distant waters, and no less than 79 of their number were destroyed.

At the beginning of September Dönitz made an attempt to renew the struggle in the north Atlantic by sending out groups of boats equipped with the new acoustic homing torpedoes, improved radar search receivers to give warning of the approach of aircraft, and strengthened anti-aircraft armaments. The movement did not pass unnoticed in the Admiralty's Submarine Tracking Room, however, and preparations were made to deal with it. The expected attack took place against a slow and a faster outward convoy (ONS 18 and 0N 202) between 15th and 27th

September. Six merchantmen (36 422 tons) and 3 of the escorts were sunk by acoustic torpedoes. As 3 U-boats were destroyed the result was fairly evenly balanced. Other convoy battles followed, but in none of them did the U-boats achieve substantial successes; and they were increasingly severely handled by the sea and air escorts.

By autumn, Dönitz realised the U-Boat war was foundering and dispatched his wolf-packs to harass the convoy routes off the coast of South Africa and the Indian Ocean. U-boats were also sent on cargo missions to Japan to ferry back vital raw materials and exchange technology. Of the total of 36 boats dispatched to the Far East, only 4 would ever return to Germany. The destruction of the U-boat 'Milch Cows' that refuelled and replenished the boats on these long trips made long distance operations difficult.

This was the turning point; German Naval Headquarters received disturbing reports that the Allies were now able to locate surfaced U-boats in any weather, and any time; day or night. Dönitz surmised that enemy aircraft and ships were now fitted with a new type of radar, and he ordered that boats entering, or leaving the Bay of Biscay were to remain submerged. Furthermore, British destroyers were alerted to the presence of U-boats by the pinging sonar echoes bouncing off the U-boat hulls and by 'Huff Duff' or HF/DF signals. This High Frequency/Direction Finder located the U-boats via their high frequency short burst radio transmissions which they made when surfaced. When an Allied listening station detected a high frequency German U-boat signal, they traced a line on a map to it. This allowed the position of the transmission to be fixed by triangulation, thus giving an approximate location of the submarine.

The new radar could register surfaced U-boats for up to twenty kilometres, resulting in the rerouting of convoys. Dönitz realised from his cryptographer that the enemy had accurate information on the locations of his U-boats. He initially suspected treason, and had all his officers investigated, which only resulted in some indiscreet French female liaisons, but no traitors. During May 1943 only 5 merchant ships totalling 27 300 tons were sunk, with a loss of 41 U-Boats; nearly three times the loss in any previous month. Compare these figures to early 1942 when 150 Allied ships were sunk with a loss of only 3 U-boats.

Known as 'Black May', U-boat losses were unsustainable – one quarter of their strength in one month. This resulted in U-boats being withdrawn from the Atlantic and the battle was won. Included in the U-boat casualties, was Dönitz`s son Peter, who at the age of twenty one died

aboard U130 on its maiden voyage. Dönitz`s older son Klaus, was training as a naval doctor, and was killed when the mine laying ship he was aboard sunk off the coast of France.

The phase 1st September to 31st December 1943, may be said to mark the final defeat of the wolf packs, since the losses they inflicted averaged no more than 22 ships (92 450 tons) per month, and 62 U-boats were accounted for in the same period. Dönitz's next move was to attempt to repeat the great successes achieved in the north-western approaches to the British Isles at the beginning of the war. But in the early months of 1944, conditions were vastly different from those which had prevailed during the U-boat commanders' first 'happy time'. Not only were those waters now continuously patrolled and covered by the Coastal Command squadrons stationed in Northern Ireland and western Scotland, but the Allies possessed sufficient escort and support groups to send some of the best of them, reinforced by several escort carriers, against the new enemy concentration. This was the period when Captain F. J. (Johnny) Walker's famous Escort Group achieved its most outstanding successes. The outcome of this phase was therefore another severe defeat for the U-boats. Between January and May 1944, merchant ship losses averaged only 13 ships (82 944 tons) per month, and in return for those meagre accomplishments Dönitz lost no fewer than 103 U-boats from all causes.

On 6th June 1944 an Allied fleet of several thousand ships and landing craft appeared off the Normandy coast; Operation Overlord had commenced. Although all these Allied vessels were concentrated in the English Channel, not one was sunk by a U-boat. Fourteen U-boats went into action at the Normandy landings, of these six were sunk. The balance of these boats was damaged and returned to port. The only success they had later was the sinking of two frigates and a landing craft. By late August 1944, the advancing Allied armies forced the U-boats to evacuate their bases on the Bay of Biscay and retreat to Norway. With all boats now fitted with the snorkel, they safely sailed around Ireland and Scotland arriving at their new bases in Norway

While the second campaign in the north-western approaches was in progress the Allies were steadily building up in Britain the enormous forces required for the invasion of Normandy, and special measures were being put in hand to deal with the expected U-boat attacks on the cross-Channel troop and supply convoys. Most of the U-boats were by this time fitted with the `Schnorkel' breathing device, which enabled them to charge their batteries while submerged

and made their presence much harder to detect - even on the short-wave radar sets. However, so intensive was Allied air and sea patrolling of the routes from the bases in western France, and so powerful were the escorts provided to the invasion convoys, that the U-boats suffered constant harassment and very few of them succeeded in actually reaching the critical waters. The outcome of this phase (June-December 1944) was, from the German point of view, devastating. No fewer than 140 U-boats were sunk (including those scuttled in the bases of western France before they fell to the Allied armies), and in return they sank only 65 ships (358 609 tons) during the seven months which saw the launching, build-up and extension of the invasion of the Continent.

It was not until May 1944, that the Type VII U-boats were finally fitted with the Snorkel system. It comprised a 9 inch diameter tube with a non-return valve at the top which could be raised above the surface when the U-boat was at periscope depth. It allowed for sufficient air to run the diesel engines underwater without creating a vacuum in the pressurised hull. The batteries could be recharged without surfacing and there was always a circulation of fresh air within the hull. However, there were a number of disadvantages, as it could snap off at speeds exceeding seven knots and the diesel exhaust smoke could be seen from the air. In addition, the noise of the diesel engines rendered the U-boat's hydrophones useless. This was possibly the reason why they had only been fitted towards the latter stages of the war.

During the final phase of the battle what may be called the 'Campaign in Inshore Waters' continued, and the Germans brought into the struggle a large number of midget submarines of various types - called 'small battle units' - to try and rectify the plainly failing conventional U-boats. However, neither class achieved significant results, nor was the flow of reinforcements and supplies needed to support the Allied armies in their eastward advance was ever severely threatened. Between 1st January 1945, and the German surrender on 8th May, U-boats sank only 55 merchant ships (270 277 tons); and no fewer than 151 of their number were destroyed. It was in this period that Bomber Command, working closely with the heavy bombers of the US Army Air Force, made a great contribution to victory in the Atlantic battle.

Not only did the bombing raids delay the delivery of prefabricated parts to the assembly yards and destroy a number of U-boats on the stocks or in port, but the mine laying by long-range bombers completely disrupted the training of new U-boat crews in the Baltic. Furthermore, Allied

bombing seriously delayed the production of U-boats of entirely new types (known as Types XXI and XXIII), whose much greater underwater speed might have restored the initiative to the Germans. There can be no doubt that the outcome of the final phase of the Atlantic battle was complete and final defeat for the Germans - as Dönitz himself has admitted. Convoy escorts were now bigger and better equipped. Many were now armed with the 'Hedgehog', a type of mortar that could fire 24 projectiles, 250 metres ahead of the ship. This was different from a conventional depth charge, insofar that each 15 kilogram bomb exploded on contact with a submarine or with the ocean bottom. This eliminated the problem of having to calculate the depth of a submarine, and if it missed it did not churn up the sea, making it possible to immediately regain sonar contact.

The Allied 'air umbrella' range was improving, with Liberators now fitted with extra fuel tanks, allowing them to remain airborne for sixteen hours, and by the end of May 1943, there were 70 aircraft in service.

The 'air gap' not covered by the Liberators was alleviated with the fitting of flight decks on some merchant ships and tankers that could catapult fighter planes. Soon escort aircraft carriers joined the destroyers and other antisubmarine vessels in a new type of flotilla concept known as a Support Group. The result was that as early as April 1943, an American convoy lost only 4 ships en route to the Mediterranean; a fraction of what might have been lost in the past.

In November 1944 a new Class XXI U-boat or 'electro boat' was launched, representing a big improvement on the Type VIIC, the type most used throughout the war. In January 1945 Dönitz announced at a meeting in Stettin; "The U-boat as a weapon has not been broken by the setbacks of 1943. On the contrary it has become stronger. 1945 will be a successful but hard year and we shall smash Britain's supply lines with our new U-Boat weapon". However, with the Allies poised to cross the Rhine by the end of 1944, the optimism of Dönitz was ill founded. The Type XXI was ten metres longer and two metres wider than the class VIIC. It had a rubber outer skin to reflect radar and sonar. It also had improved armament and overall speed, including air conditioning and refrigeration. This new class of boat was able to remain submerged for weeks but was only finally operational by February 1945 when they sailed for British waters and sank 2 merchant vessels. Although by April 1945 the war on land was lost, there were more than 100 Type XXI boats in training and almost ready for war, far too late to reverse the course of the

battle. Sources estimate that more than 100 convoy battles took place during the war. They cost the Merchant Navy more than thirty thousand men, and over 3 000 ships. The equally terrible cost for the Germans was 708 U-Boats, and twenty eight thousand crew. Of the total operational boats at the time of surrender, 2 headed for Argentina, 5 for Japan, and 221 scuttled in order to escape the indignity of surrender.

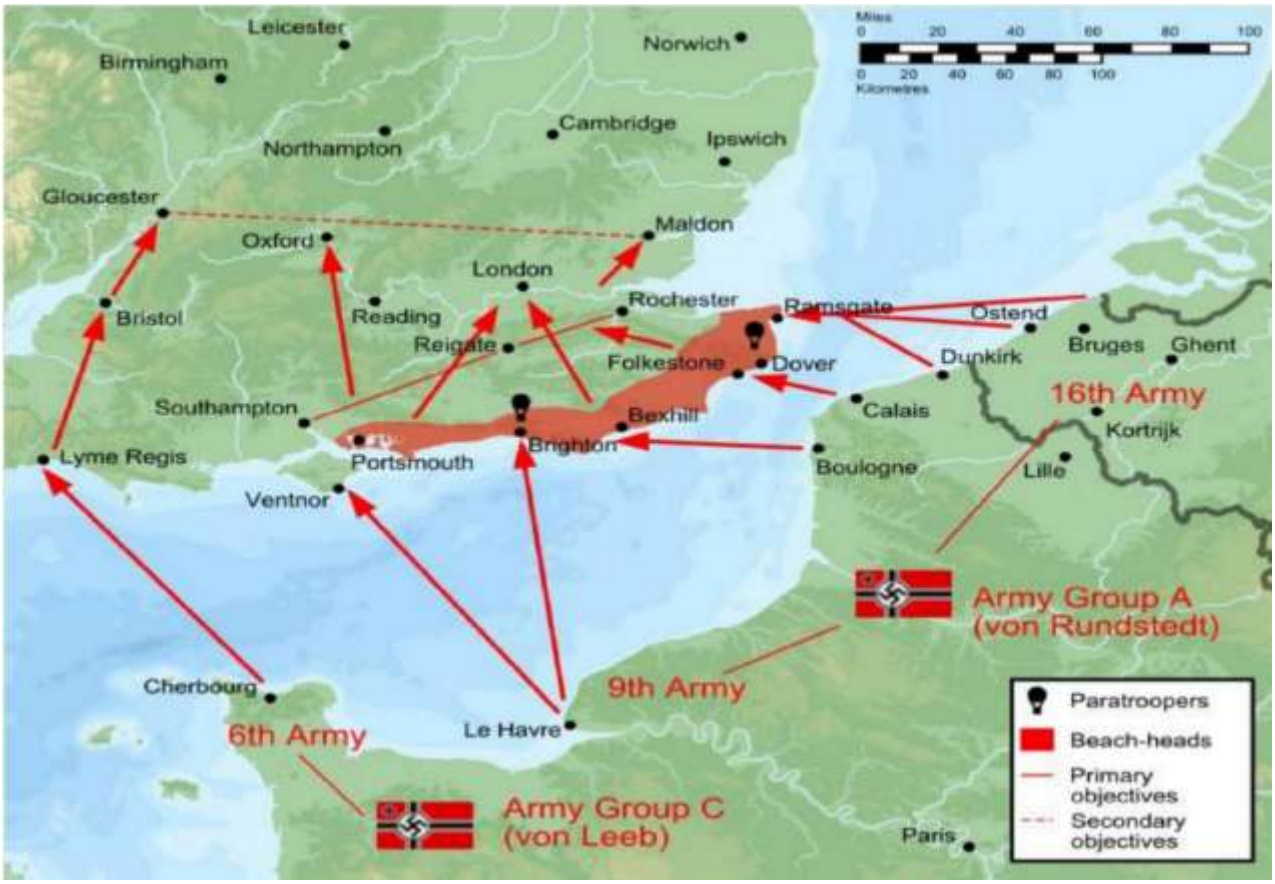
To sum up the results of the five and a half year struggle for mastery of the seas and oceans, the Germans built and commissioned 1 162 U-boats, By far the greatest proportion of the losses suffered at sea (500 out of 632) were inflicted by British warships and aircraft. It is also interesting that the final count shows that the Royal Navy and RAF shared almost exactly equally in those successes. Apart from the U-boats sunk in combat or lost through other causes 156 surrendered when their country accepted the Allied terms for the cessation of hostilities.

Though enemy raiders, bombers and mines all at times caused substantial losses and considerable anxiety, the Battle of the Atlantic was in the main fought between the sea and air convoy escorts and the German submarines. And if in 1942 and early 1943 they came within measurable distance of victory it was the endurance and gallantry of the little warships and long-range aircrews, combined with the steadfastness of the merchant seamen, which combined to defeat the most serious challenge faced by this country after the Battle of Britain had been won in 1940.

After the war Admiral Karl Dönitz was convicted at Nuremberg of war crimes, despite a controversial trial where he had in fact been supported by Admiral Chester Nimitz and other US Naval officers, insofar that the US Navy had waged their submarine warfare under the same kind of rules. He was sentenced to ten years in prison where he served his term and was released in 1956.

Due to his Nuremberg conviction, the man who once was Grand Admiral of the German Navy and for a brief time Reich President; was denied a state funeral by the Federal Republic of Germany when he died in December 1980.

CHAPTER FOUR



OPERATION SEALION

Operation Sealion was the invasion planned to take Hitler triumphantly into London. However, it was the invasion that never was. Why was this, why did Hitler not invade Britain; especially after Dunkirk?

To understand Hitler's dilemma it is necessary to go back to the collapse of the French. Even by his own optimistic standards, Hitler had been taken by surprise at the swift fall of France that left Great Britain as his only major Western European enemy.

When France fell in June 1940 Britain was at her most vulnerable and a successful invasion at that point would have ended the war on German terms. Yet, Germany could not capitalise on its amazing good fortune. No contingency plans had been prepared for such an eventuality; and even if they had existed, the Kriegsmarine was totally inadequate for Sealion.

The reasons for Germany's lack of naval readiness to engage the British fleet were entirely political. Hitler never envisioned a long-term war with Britain, much less an invasion. He considered German mastery of the continent to be central to world domination and expected the 'nation of shopkeepers' to be sensible and come to terms. Therefore, since Hitler's strategic aims lay on the continent the Wehrmacht and Luftwaffe received top priority. The navy was merely an ancillary service.

Perhaps there was some merit in this as the Blitzkrieg into Poland then the total collapse of France in just six weeks stunned the world. In June 1940 all that stood between the seemingly invincible Wehrmacht and Nazi domination was the English Channel plus some badly shaken British troops recently evacuated from the continent. The shattered remnants of the British army regrouped and frantically prepared, as best they could, to repel an amphibious assault. Britain once more found herself facing a powerful Continental enemy just as she had experienced back in the days of Philip of Spain and of course Napoleon.

On those occasions Britain had resisted invasion by retaining mastery of the Channel. Sea power proved to be the first line of defence, but in 1940 that now needed to be reinforced from the air. The Royal Navy had learned from Norway and France that Sea power was useless if control of the skies wasn't possible. Theoretically, Operation Sealion appeared simple and Britain should have been an easy target. After all, no anti-invasion plans had been prepared. British pre-war defence relied, as did the French on the Maginot Line. Events, however, overtook the Allies. The Wehrmacht had achieved astounding success since the attack on Poland and the Luftwaffe had proved to be a formidable force. However, due to the heavy naval losses suffered in the Norwegian campaign, Hitler's operational fleet at the time of Sealion had been reduced to one pocket battleship, four cruisers and a dozen destroyers.

Germany had lost about half its surface navy in the Norwegian campaign, and would have been incapable of keeping the Home Fleet out of the Channel. In effect the British had a 10:1 superiority over the Germans. However, the Royal Navy could not bring this enormous advantage to bear as most of the fleet was engaged in the Atlantic and the Mediterranean, but, as noted, the superiority of the Royal Navy was now challenged by the Luftwaffe. British sea power was no longer the primary issue. It was airpower, and to achieve air superiority the Luftwaffe would have to neutralise the RAF. Only then could British sea power be contained long enough for German ground forces to be ferried across the Channel.

This was the general situation in the summer of 1940. But, how serious was the threat of invasion? Politically, the Führer would have preferred to come to an understanding with Great Britain. He admired the British for the way they had built their Empire and wished to negotiate a peace deal. He was quite convinced that after the defeats in Norway and particularly after the disaster at Dunkirk, Britain would sue for peace, and he offered what many considered at the time to be very generous peace terms. Hitler reasoned that a British defeat in 1940 would bring about the disintegration of her Empire and German blood would be shed accomplishing what would only benefit Japan and the United States.

Hitler broadcast his peace offer on 19th July, but Churchill treated this contemptuously, stating Britain would never sue for peace and proceeded to rally public support for his defiant stance. An irate Hitler retaliated; Britain, despite her hopeless situation, and still showing no willingness to come to terms, would be invaded and subjugated. Hitler announced that Britain was to be eliminated as a base for future operations against Germany and approved Operation Sealion. Other than a draft no detailed plans had been prepared.

The British army stationed in Britain at this time consisted of twenty six divisions, teweve of which had only recently been formed and were not fully trained or equipped. The remaining 14 divisions had lost a vast amount of military hardware in France, thus necessitating obsolete armaments to be stripped from military museums. Under the cash and carry programme Britain was able to purchase half a million rifles and 900 artillery pieces from the US. By September 1940, twenty nine divisions, including two Canadian were equipped and available for national defence.

The Royal Air Force had mobilised the last of its reserves and Spitfire production had accelerated. Lord Beaverbrook, the minister responsible for aircraft production appealed to the

public to donate scrap metal to build fighters, resulting in mountains of iron and aluminium that mostly could never be transformed into Spitfires or Hurricanes. However, in terms of morale boosting, it was a runaway success.

By this time the German Army staff had submitted an invasion plan that would transport forty one divisions across the Channel. Grand Admiral Raeder, who was not a supporter of Operation Sealion rejected this as impracticable and told Hitler of the difficulty in obtaining landing craft suitable to carry invasion troops. He recommended a limited crossing restricted to the Dover area as the German navy could never provide adequate protection over a wide front. Raeder had a far more realistic view of the difficulties involved in Sealion. He considered that the war would be conducted far more successfully by focusing on the Mediterranean and repeatedly warned Hitler of the dangers associated with a landing in Britain. Particularly when faced by an enemy committed to fight. On the assumption that a beachhead could be established on British soil, Raeder stated there was a danger that the Royal Navy would cut off supplies to German troops, isolate them and force their capitulation.

In 1940, a German infantry division required 100 tons of supplies per day and a Panzer division consumed 300 tons. To move nine divisions and sustain them for the first ten days before the second wave was scheduled to land would strain German resources to the limit. In addition to an under strength Navy and inadequate planning, German inter-service rivalries also emerged; especially when the Army saw Operation Sealion as nothing more than a large river crossing in which the 'Luftwaffe would do the work of artillery'. The army preferred a broad front to split enemy forces, but the navy wanted a narrow front to facilitate protection of the invasion force. Amphibious combined operations require close cooperation between the various branches and the Germans simply did not have this.

On the last day of July Hitler held a meeting at the Berghof. Raeder detailed why he believed the army plan was untenable and argued for a postponement of the invasion until 1941. All three branches of the German military reiterated the problems associated with an invasion. It would require;

1. Control of the Channel
2. Control of the skies,
3. Good weather and,

4. Destruction of Coastal defences.

The result was a compromise. The invasion force was reduced to twenty seven divisions to provide von Rundstedt with a sufficiently wide front to break out and encircle London. Other groups would head towards Gloucester and Bristol and a feint landing on the Norfolk coast was planned to draw off British reserves. Addressing his service chiefs, Hitler made it clear that he recognised the plan had its dangers; especially those identified by Raeder. But he was keen to press Britain into submission so that he could turn his full attention on his real enemy; Russia.

Hitler therefore, wanted operation Sealion to be over by mid-September. Raeder however, claimed the invasion could only start in mid-September providing Göring's Luftwaffe defeated the RAF. As no German battle fleet existed to give off- shore bombardment, long range coastal batteries with ranges of between 40 and 50 kilometres would have to be positioned around the Calais area. Combined with massive Stuka attacks, they were planned to neutralise British coastal defences and prevent the Royal Navy from attacking German troop transports.

The army would immediately capture a port in order to land the Panzers. Air supremacy and the early introduction of armour were thus critical to achieve victory. Hitler rejected requests to cancel; if granted, this would have undermined the invasion as a political threat. The build-up for invasion had to continue and Britain had to be kept under military pressure.

It was decided that the Luftwaffe should tighten the screw by clearing the channel of British warships and the skies over southeast England of British aircraft. To establish command of the Straits of Dover from mid-July the Luftwaffe stepped up the military pressure by attacking the Channel ports and shipping. By the end of July the Royal Navy had to pull all its larger warships out of the channel because of the threat from German aircraft. All seemed to be going to plan; this mounting military pressure and the prospect of invasion were intended to break British spirits and render Operation Sealion unnecessary.

Certainly, neither the threat of imminent invasion nor offers of an 'honourable' peace had done the trick. It appeared that Germany would actually have to execute one of the most difficult military operations imaginable; an invasion, launched across at least 35 km’s of sea culminating in a landing on a fortified and desperately defended coast line. It was immediately clear that this

could not even be attempted until the Royal Navy; still one of the most formidable fighting forces in the world had been either destroyed or diverted and the Royal Air Force eliminated.

This resulted in a decisive aerial battle of attrition that became immortalised as the Battle of Britain, and it officially opened on 13th August 1940, "Eagle Day". It was one of the decisive battles of the war. Air Chief Marshall Sir Hugh Dowding, a master tactician and immensely more capable than Göring, did a first class job in resisting the demand to fling Britain's last reserves of fighter squadrons into the Battle of France, thus preserving the fighter force that met the German attempt to gain air control over Britain and the Channel. At the time, the Luftwaffe had 600 fighters available. RAF Fighter Command had 670. Britain was actually out-producing Germany in fighter planes, and the proportions were steadily moving in Britain's favour.

At first German attacks were concentrated on the RAF airfields, and almost succeeded; the government issued codeword 'Cromwell', to indicate that an invasion was imminent. Church bells rang as a call to arms for the Home Guard. Across the Channel the final preparations for Operation Sealion were concentrated around their embarkation points. The 2 500 transports, consisting of barges, tugs, and light craft massed in the invasion ports came under intense attacks from RAF Bomber Command and Coastal Command.

Believing that British resistance would crumble, and that the RAF would be forced to use its remaining reserve squadrons, Göring intensified the attacks and his losses mounted. These losses were shared between the fighters and bombers; whereas RAF Fighter Command, being constantly in action, bore the brunt and were soon reduced to less than one thousand pilots, who were rapidly reaching a state of physical and mental exhaustion.

However, a dramatic event intervened; Hitler had forbidden terror bombing on civilians but when a German formation got lost and jettisoned their bombs over London, Churchill ordered a reprisal raid on Berlin. Göring ordered counter raids on London thus diverting the Luftwaffe from its original purpose; that is the destruction of the RAF. This caused Operation Sealion to be postponed until 27th September, the last day for favourable tides. After that date Channel conditions would be too risky. The decision to switch objectives from British fighter bases to mass raids on London and other cities cost Germany the battle. Hitler postponed the invasion 'until further notice' and ordered the dispersal of the invasion craft. Göring had failed to smash the RAF; proving that the Luftwaffe was clearly not invincible.

During the Battle of Britain, several paramount elements favoured the RAF. First was the defence radar network that although incomplete was the most technically advanced in the world. The work rate of the Hurricanes and Spitfires would have been fruitless but for this effective system of underground control centres and telephone cables, which on Dowding's initiative had been devised and built before the war. It enabled fighter planes to take off in time to avoid being attacked on the ground and directed the fighter planes by radio to intercept and often surprise the enemy.

The RAF also inflicted heavy casualties on the previously all-conquering Stuka's, proving them to be most vulnerable and they were withdrawn from the battle. The British early warning system foretold any German attacks, and with the help of the code breakers of Bletchley Park, had broken the Ultra code used by the Luftwaffe. By mid-September the RAF had more pilots available than the Luftwaffe. Fighter Command had gained the upper hand and although Britain's cities were heavily bombed, by mid-October the Battle of Britain was over.

Another key element that gave Britain a massive tactical advantage was that a British pilot who survived being shot down could quickly be returned to operational status, whereas a German pilot who survived was removed from the battle and became a prisoner of war.

Hitler committed a major strategic error by allowing Göring to assume leadership in the Battle of Britain. The Reichsmarshall proved flawed in his judgment by switching air attacks from fighter airfields to London and other cities. Above all, he failed to concentrate on knocking out radar stations.

The plan for an invasion of Britain was from the start a great risk. An unsuccessful landing would nullify all the German achievements thus far obtained and it was acknowledged that the lack of German naval and air superiority would have caused catastrophic harassment to any invasion. Hitler decided that the invasion would be executed only if there were no other ways of forcing Britain to her knees and since such circumstances were never gained, the invasion was postponed indefinitely. Hitler diverted the German war machine to Operation Barbarossa, and was to see, as did Napoleon his great armies annihilated in the bitter Russian winter climate.

In the meantime, Hitler focused on an economic war with Britain and pursued the aim of defeating Britain in three different ways:

1. A combined air and sea attack against British trade and industry;

2. Air bombardment, intended to demoralise the population,
3. With the aid of his allies he would attack British positions in the Mediterranean; such as Gibraltar, Malta and the Suez Canal.

In adopting the Mediterranean strategy, Hitler quite unwittingly, began the geographical dissipation of the Wehrmacht, which in the end would prove fatal. Franco demanded too high a price for helping him take Gibraltar, and Petain was reluctant to assist in North Africa. Only Mussolini was willing, and he was an unpredictable ally.

The plan for Operation Sealion is perhaps the most flawed in the history of modern warfare. Strategic planning and preparation was woefully inadequate and would have left the German Army paralysed; its tanks standing useless without fuel and its army crippled by the lack of resources.

An explanation as to why Sealion was considered to be a huge bluff by Hitler: The German navy was in no real position to wage amphibious warfare and had no ready-made vessels suitable for landing over open beaches. Each service worked separately without a joint staff, resulting in army and navy planners soon developing conflicting ideas.

When France collapsed, in June 1940, the German staff had not even considered, never mind studied, the possibility of an invasion of Britain. Troops had received no training for seaborne and landing operations, and nothing had been done about the means of getting troops across the Channel. The Royal Navy had countless smaller craft, including sloops, minesweepers, converted trawlers and similar craft. These would have been of little value against warships. However, against the Rhine barges forming the main invasion transport force, they would have been effective.

Even if the Germans had won the Battle of Britain, a successful landing would have been a long shot. Assuming that they did establish air superiority and a beachhead in Southern England, there was still a considerable British force waiting for them, and a quick powerful counter-attack supported by the Home Fleet was a real possibility. If the Germans did repulse this counter-attack and have a strong invading force with tanks and air cover, they now would have to capture London; one of the five largest cities in the world. It would have been held at all costs and taken months to capture, even if surrounded and besieged. Another factor is that the heavy

war industries of the Midlands and Scotland would still be in British hands. Their production capacity would allow the British to continue to be supplied during any fighting. Therefore, the Germans would have to capture all of the country. Unlike France, the British would not surrender after a portion of the country was captured. The Germans would have to fight through the large urban areas of major cities such as Birmingham and Liverpool at a terrible cost.

The British could also call on huge reinforcements from India, Canada, Australia and South Africa to match the Germans in men deployed in battle. It has been suggested that an invasion immediately after Dunkirk would have produced a German success, as it would have been easier at that time. It is true that the British Army was less able to offer resistance in July than it was by September. But the difficulty facing the Germans was not beating the British Army; it was getting across the Channel in the face of the RN and the RAF.

In July the German forces had not gathered any transports and only had the capacity to lift less than one infantry division. It should be remembered that Britain had retained 24 fighter squadrons as Home Reserve. These squadrons were rested, maintained and ready. The Luftwaffe, on the other hand, had flown many sorties in the French campaign and needed time to recover. Plus the British Radar chain was undamaged, as was the command and control structure. So the RAF was at peak efficiency in July whilst the Luftwaffe had tired crews and aircraft in need of repair.

Operation Sealion can only be described as a blueprint for a German disaster. The first steps to prepare for an invasion were taken only after the French capitulated and no definite date could be fixed. It all depended on the time required to provide the shipping, and alter them to carry tanks, and to train the troops in embarkation and disembarkation. The German invasion of Crete a year later provides an indication of what may have occurred at Sealion. Reinforcement and supply by sea proved impossible even though the Luftwaffe had absolute air superiority. The Royal Navy intercepted and utterly destroyed the flotilla of small boats crossing from Greece. Although they eventually prevailed, German paratroops and transport aircraft were decimated in the process.

One can imagine the slaughter had the RN and RAF run through the barges loaded with men and equipment during the proposed Sealion crossing. Planning an invasion and assembling a fleet in a few weeks was clearly impractical, but timing was an essential part of the game of bluff that Hitler was playing. Also, the extraordinary timing that he imposed, suggests the political

rather than the military nature of the invasion. Germany did not have the industrial capacity to build specially designed landing craft for amphibious operations.

The first instruction to begin planning for Sealion was issued 84 days before the proposed invasion date. In 1944 D-Day had been in the planning phase for two years. The parallels between Operation Sealion and Operation Overlord are striking. In every category Allied preparation for Overlord was far superior to German efforts in Sealion. On D-Day the largest amphibious force ever assembled prepared to breach Hitler's vaunted Atlantic Wall to liberate Europe. Getting soldiers into landing craft and onto the proper beach on time is no mean feat. Plus coordinating Naval Gunfire and Close Air Support adds another degree of difficulty. The multitude of organisational and logistic considerations involved in amphibious operations is staggering. Every function in the overall plan is interdependent, relying upon precise execution for success. Most importantly, every aspect of the landing plan was reinforced with realistic training. When the Allied forces went into combat on 6th June 1944 they were physically and mentally well prepared.

Even if Fighter Command had been wiped out, RAF Bomber Command was largely intact and would have attacked the beachheads day and night. The Germans lacked the means to keep the beachheads adequately supplied and had no plans for artificial harbours or pipelines across the Channel, both of which played a crucial part in supplying Allied operations in Normandy.

As their intelligence was very poor, the Germans had little knowledge as to which beaches were the most heavily defended or the proximity of British reserves to the beaches. British counter-intelligence had already captured or ‘turned in’ all German agents operating in Britain, which limited Germany to aerial photographs. The overall concept and execution of Overlord was a masterpiece of strategic planning made possible by the enormous capacity of Allied industry. In Normandy, the Allies had complete naval and air superiority. They also had a host of special equipment, coupled with hard-won experience, and a considerable level of support from the local population. The creation of an ‘Atlantic Wall' stretching from Spain to Norway, covering some 4 500 kilometres was one of the largest construction projects in human history, but, as Frederick the Great noted, ‘He, who defends everything, defends nothing’

Another reason why Sealion is considered a huge bluff is that at the meeting Hitler called to discuss various options, the Luftwaffe did not attend; even though it was recognised that the Luftwaffe was essential to win air supremacy and to keep the RN out of the way. The concept

for getting 9 divisions across the Channel was to block the west of the Channel with U-Boats, and the east of the Channel with mines and torpedo boats. The proposed time between the first landing and the second wave of reinforcements and supplies would be 10 days. Thus 9 attacking divisions, without any heavy equipment, would be expected to hold out against 29 defending divisions for this period. o get the first wave across, the Germans gathered 170 cargo ships, 1 300 barges, and 500 tugs. The barges were mainly those designed for use on the Rhine; wash from a fast-moving destroyer would swamp and sink them.

Thus, if Royal Navy Destroyers could get close to the invasion fleet they could actually sink the lot without firing a shot. These same barges were also underpowered for open water operations, and required towing by a tug at a speed of 3 knots, in the Channel, which has tides of 5 knots. German troops would be wallowing for a minimum of 12 hours in an open boat, and then be expected to carry out a fiercely opposed amphibious landing. If this seems to be a nightmare scenario, and a recipe for disaster, it is nothing compared to other elements. The most ridiculous of which was the plan for manoeuvring the invasion barges on the landing beaches. This huge mass of towed barges was to advance in line at night coordinated by loud hailer's.

Only one training exercise was conducted off Boulogne. It was in good weather and good visibility, with no navigation hazards or enemy defences to contend with. Of 50 vessels committed, less than half managed to land their troops at H Hour. One tug lost its tow; one barge overturned when too many soldiers crowded on one side and several barges landed broad-side and were unable to lower their ramps. The results of the fifty-barge exercise did not bode well for an assault on Britain.

Then there was the Irish Question. Operation Green was the German code name for the decoy invasion of Ireland, planned in conjunction with Operation Sealion in 1940. Barges were to be sent towards the south coast of Ireland to give the impression of a wide scale sea invasion of the British Isles. German agents were parachuted into Ireland to make contact with the IRA and to initiate a bombing campaign throughout Ireland to destabilise the country.

Once the I.R.A. bombing campaign got underway, German paratroops would be parachuted into zones to sever communication lines and capture RAF airfields. The Luftwaffe would then be able to strike at targets in Scotland and the west coast of England and strangle Britain’s lifeline in the Atlantic. The agents, however, reported back to Germany that the I.R.A. were ‘unreliable’

and ‘undisciplined’ and would take months to train. The operation was finally scrapped when Sealion was placed on indefinite hold; and the German agents were later captured.

As noted previously each service vied with the other for Hitler's favour. As a result, command relationships between the services were often strained and operations suffered accordingly. Just to make matters worse, no engineers or equipment were included in the first wave to deal with obstacles. The invaders would have to cross rivers and canals more than 20 metres wide and had no means of getting across. Then there is the question of life jackets. Thousands had been provided, but, despite all the best efforts of the planners, there were only sufficient for the first wave. According to the plan, these life jackets would be brought back again by the boats needed for the second wave. The problem was that these life jackets were worn beneath the combat pack. The troops were expected, while under fire, to first take off their pack, then their life jacket, and then don the combat pack again, and only then start doing something about those rather inconsiderate British shooting at them. One wonders what the veterans of Omaha beach would say about the viability of this. Not that it would have been of the slightest use because no one had been made responsible for collecting the life jackets and return them to the boats. The life jackets would simply have piled up on the beach.

Then there was the matter of artificial fog. A serious conflict arose between the Army and the Navy regarding the use of artificial fog. The Army wanted it for protection on the open beaches. The Navy was opposed to its use for the reason that the landings were difficult enough without making it impossible to see anything. Inevitably, a compromise solution was found; it was ruled that the Army would decide whether or not to deploy artificial fog, but that it was the responsibility of the Navy to actually deploy it.

The Luftwaffe was expected to do all of the following:

1. Act as artillery for the landing forces
2. Keep the Royal Navy out of the Channel
3. Win total air superiority
4. Prevent British Army reinforcements from getting to the beachhead by bombing railway lines
5. Make mass attacks on London to force the population to flee the city and choke the surrounding roads.

With a limited range, the fighters would have a huge number of areas to protect. Meanwhile the RAF would be presented with many targets, such as barges, landing beaches and transport aircraft. If the Germans are flying fighter cover over the barges; then these fighters are not escorting German bombers, leaving them unprotected against RAF fighters. In this case, the Luftwaffe would be ineffective at keeping the Royal Navy at bay. The British came up with a far superior defensive plan such as pre-emptive attacks on staging areas, interdiction at sea and all-out assaults at the landing points. In a short period the Army refitted the survivors of Dunkirk, organised a Home Guard, created beach defences, and set up mobile reserves.

Hitler's far reaching decision to stop the Panzer's before they could deliver the coup de grace to the BEF at Dunkirk has never been satisfactorily explained. Perhaps he did not seek the outright submission of Britain. However, what is for certain is that he genuinely believed that in the end, Britain would come to terms; thereby, facilitating a rapid victory in the east that would shatter Britain's last hope of containing Germany. An impatient Hitler repeated Napoleon's mistake by trying to crush Russia before he had settled with Britain, resulting in a nightmarish war on two fronts.

Hitler failed to learn the lessons of Napoleon. He fully expected Britain to be content with a simple balance between a land power and a sea power. But as had been her foreign policy for 500 years, Britain would only accept a balance of power on the Continent itself. Hence, Churchill's announcement to Stalin that German hegemony in Europe was as dangerous to the Soviet Union as it was to Great Britain and urged that both countries should agree on the re-establishment of the European balance of power. Although Churchill often spoke of restoring freedom to the nations of Europe, it was the balance of power that really concerned him. Something Hitler failed to grasp as basic British traditional foreign policy.

The invasion of Britain was the obvious strategic direction for Germany to pursue, but the planning was half-hearted when compared to that for the German invasion of the Soviet Union. Planning and preparation for both possibilities continued into the summer of 1941, but it was obvious by then that the campaign against the Soviets was taking shape while that against the UK was not. Germany was not ready to do battle with a naval power such as the Royal Navy. Preparing to invade in 1941 was probably more feasible but would have required the Third Reich to focus on the production of naval and air forces at the expense of its army. Even then, if the Nazis had conquered Britain, it would not have improved their overall strategic situation. To begin with, a substantial German naval presence would have to be brought into the

Mediterranean. At best, Germany would conquer Egypt, or possibly all of the Middle East by the end of 1941, turning the Mediterranean into a German lake. However, the infrastructure to benefit from any resources found there would have to be created. Meantime, this would leave the Third Reich dependent on the Soviets for food and raw material. The Soviets could make more territorial demands on Romania; a primary source of oil for Nazi Germany. Worse yet, from Hitler's perspective, the Soviets could take advantage by attacking Germany directly. Given the huge Soviet army deployed on the eastern border of the Reich, these were not trivial concerns.

During a meeting in Berlin in November 1940, Hitler actually suggested to Molotov that the Soviets join the Tripartite Pact, despite the fact that German military planning for an attack on the Soviet Union was underway at this time. Molotov refused the offer to join the Axis, the ideological divide between the communist USSR and the fascist Third Reich was too great. Joining the Tripartite Pact entailed additional security risks for the Soviet Union; it could only benefit Germany. The Soviet refusal to join forces against Britain ensured Hitler's preference for Operation Barbarossa.

Barbarossa was preferable to Sealion for operational reasons. Landing an army across the English Channel was unlike anything the German army had ever attempted while Barbarossa required rather straightforward military planning from the German perspective. Barbarossa was a campaign that the German High Command felt competent to plan. Sealion was not. In summation, although the fear of a German invasion was real, it was unfounded. German plans were amateurish, or at best unprofessional, regarding the Channel as a relatively minor obstacle, little more than a wide river crossing. It should also be taken into consideration that Hitler's assessment of the political and military situation in 1940 was not too far wrong. America wanted no part in another world war; the U.S. Joint Chiefs, in particular, distrusted their British counterparts; they were much more focused on the growing Japanese threat.

The American Ambassador to Britain at the time was Joe Kennedy, a German sympathizer who predicted a British defeat. It was only after British survival in the Battle of Britain that America looked to lend that 'fire hose' across the Atlantic and be 'a good neighbour'. British wartime cabinet documents released in 1998 reveals that after Dunkirk, and observing the daunting military achievements made by Nazi Germany, two members of the British War Cabinet, Neville Chamberlain and Lord Halifax, declared that they thought it best to propose a peace settlement.

There were a lot of influential British fatalists around Churchill, including Halifax, who thought the preservation of the Empire was worth an accommodation with Germany. Churchill was a relatively lone voice calling for resistance. If the RAF had not prevented the Luftwaffe from gaining air supremacy, Churchill would have been replaced by Lord Halifax, who had supported appeasement and was known to favour peace negotiations rather than face a civilian bloodbath on British soil. Churchill had to drum up support and he did this with his famous speech, on 4th June 1940, where he declared we would, “fight them on the beaches, the landing grounds, in the fields and the streets; in the hills… we shall never surrender”! The response to this was a rapturous applause in the House of Commons, and reinforced the bulldog spirit of the British people.

Although it did not appear so at the time Sealion was never a viable military option. It was a political threat that might have brought a timorous leader like Chamberlain to the negotiating table but never a tenacious warrior such as Churchill. He was keenly aware that Hitler would have to break the people on the British Island or lose the war. Further, if the Island people had been broken what would have been the consequences for the world? The British army on the Nile would be cut off without supplies permitting the Italians to dominate the Mediterranean and Suez region. The necessity to send Rommel and the Afrika Corps to Mussolini’s rescue would not have arisen. Operation Barbarossa would have proceeded on schedule and there would have been no need to build the Atlantic Wall and to garrison military personnel desperately needed in Russia. The failure to conquer Britain before Russia, did not involve Germany on a war on just two fronts, but rather a war on half a dozen.

Operation Sealion was not a military plan, it was a wish.

CHAPTER FIVE

HMS HOOD

If any single ship could be said to have been the embodiment of the British Empire, and British sea power, it was the 'Mighty Hood'. For more than 20 years HMS Hood upheld the pride and the traditions of the Royal Navy in every corner of the globe. By the late 1930's however, the Hood, though still a majestic warship, had begun to show her age. She was an old lady now, one of the oldest capital ships in the navy and no longer a match for more modern battleships.

On 24th May 1941, at the Battle of the Denmark Straits, the Royal Navy ships HMS Hood and HMS Prince of Wales engaged the German ships Bismarck and Prinz Eugen. The Hood was defeated and destroyed with a large loss of life. Out of a complement of one thousand four

hundred and nineteen officers and men, only three were rescued. The sentimental favourite of the Royal Navy that had been looked upon with a blend of affection, admiration and awe, not only at home but the world over was gone after only a few minutes of action. Why was this, why was the 'Mighty Hood' sunk so suddenly and dramatically?

The reality of the situation is that the term 'Mighty Hood' was actually a misnomer. She was not a battle ship but a battle-cruiser and the difference was quite significant for the following reason. At the beginning of the 20th century, Admiral Fisher, Britain's premiere naval visionary made it his objective to ensure that the Royal Navy was not only the largest in the world but also the first truly modern navy of the 20th century. His most notable achievement was the revolutionary Dreadnought battleship that combined large calibre long-range guns with heavy armour protection. At a stroke this innovative breed of vessel rendered all pre Dreadnought battleships obsolete and the design soon became the benchmark for all future battleships. As a consequence of this inspired leap of faith or paradigm shift, no nation or even alliance of nations could successfully stand 'toe-to-toe' with the Royal Navy in fleet engagements.

Fisher came to the conclusion that the only course of action for potential enemies would be commerce raiding to strike at the empire's supply lines. The problem therefore was how best to counter such threats and protect shipping lanes stretched around the globe? The submarine, whilst showing great potential, which the Germans would take maximum advantage of, was at this time still largely unproven. Destroyers and cruisers, though fast, lacked sufficient firepower. Something new was required and this motivated

Fisher to devise the 'battle-cruiser'. He envisioned ships similar in size and firepower to the dreadnoughts, but much faster due to reduced armour protection. They would be the 'cavalry of the sea' and ensure Britain's supremacy. Fisher's belief was that 'speed coupled with heavy firepower would be the battle cruisers best protection'. They would have the capacity to either out-run or out-gun existing warships. Hence the concept of the 'battle-cruiser' was born and by the outbreak of World War One in 1914, Britain had built a number of them. Their tactical role was, however, converted to scouting for the Grand Fleet when deployed during wartime and Fisher's argument that speed was armour would prove to be a tragic error.

On 31st May 1916, the great naval battle at Jutland took place and although the Royal Navy achieved a strategic victory, they were made to pay a high price. Three battle cruisers, The Invincible, The Queen Mary, and The Indefatigable all blew up incurring an appalling loss of life.

Plunging German shells easily penetrated their deck armour to detonate magazines to reveal critical faults in battle cruiser design. These tragedies made it abundantly clear that battle cruiser deck armour protection was inadequate. However, the Admiralty in general terms chose to disregard the main lessons of Jutland and proceeded to prepare designs for the new and larger 'Admiral' class of battle-cruisers. Therefore future battle-cruisers were destined to suffer from the same flaws as their predecessors.

Battle-cruiser Hood was the largest of these new design vessels to be built for the Royal Navy. She was 860 feet long, had a displacement of 36 000 tons and was capable of reaching a speed of 32 knots.

Although she was designed for speed, her 15-inch broadside firepower could match that of anything then afloat. Hood was the ultimate battle-cruiser. But she had that one great defect; a lack of armour on her upper decks and events would prove that this fatal error would be the Hood's 'Achilles' heel'. The design and protection of this ship were such that penetration of the magazines by high velocity armour piercing shells was quite possible. The Hood's condition could be likened to all intents and purposes as a microcosm of the British Empire at that time; ancient, glorious, biggest in the world, shrouded in ceremony, but hopelessly out of date and defective. The myth of the pre-war British Empire and The Hood's invincibility was a gigantic bluff.

HMS Hood, was built at John Brown shipyard in Glasgow and was named in honour of the Hood family who had given the Royal Navy four famous admirals since the 1700's. Lady Hood, the widow of Admiral Horace Hood who had been killed at Jutland when the battlecruiser Invincible blew up, launched her. The Hood was the fastest, the most elegant as well as the biggest warship in the world. Between the wars, when the colour red for Britain's empire covered a quarter of the globe, the Hood showed the flag on cruises to Scandinavia, South America, the Mediterranean, and the Pacific.

Her most famous cruise took place from November 1923 to September 1924, when in company with the Repulse, (another fated battle-cruiser) she embarked on the 'Empire Cruise'. On this cruise HMS Hood logged over 38 000 miles and visited numerous countries. Literally millions of people came to see her and in South Africa she called on Cape Town, East London and

Durban. It was a highly successful public relations exercise and served as a subtle reminder to friend and foe alike that Britannia ostensibly still ruled the waves.

Towards the end of the 1930's when the war clouds were gathering in Europe the Hood was scheduled for a long overdue refit, which would include the reinforcement of her deck armour. This upgrade was intended to make her as potent a weapon as the newest battleships. But the threat of impending war once more with Germany caused the refit to be postponed. When World War Two eventually broke out in September 1939, the Admiralty immediately rushed the Hood into wartime service even though she was no match for modern battleships, so why then did the Admiralty press her into service at the start of the War?

The probable answer is the 'larger than life' legend and reputation that had made her so widely respected and feared the world over. This inflated reputation may also have impaired the Admiralty's judgment. She had come to be thought of as a fast battleship and had been looked upon as the 'Mighty Hood' for so long that many at the Admiralty actually thought her to be invincible. In the end she proved to be, just as invincible as HMS Invincible, the very first battle cruiser to be sunk at Jutland.

In May 1940, Hitler's blitzkrieg in the west, followed by the evacuation at Dunkirk created a chaotic situation for the Anglo French allies. On 16th June, the French government, who by this stage consisted of a group of defeatists headed by Petain, informed Britain that they intended to seek an armistice with Germany. This immediately raised concerns regarding the future of the quite significant French fleet. Churchill announced that Britain would continue the fight and thereby insisted that French warships be dispatched immediately to British ports or be neutralised. The French declared that their Fleet would never be surrendered and would be scuttled if any attempt were made to seize the ships by the axis powers of Germany or Italy. Churchill considered this to be too risky and decided that direct action was necessary to prevent the French fleet from falling into enemy hands, which would tilt the balance of naval power in their favour. Surprisingly the Americans who would not enter the war for another eighteen months gave their support.

At Gibraltar, Vice-Admiral Somerville, the commander of Force 'H' was ordered to secure the transfer of the French warships at Oran in North Africa, otherwise put them out of action. The French squadron consisted of two battleships, two battle-cruisers, twelve light cruisers and destroyers, and four submarines.

Force 'H' included the capital ships Hood, Valiant, Resolution, and the new aircraft carrier Ark Royal. On arrival at the French port, Somerville informed the French that their ships would not be allowed to leave harbour unless British terms were accepted. The stubborn French naval commander refused to comply with any of the conditions laid down and ordered all the French ships to prepare to put to sea. At this point Somerville, aboard his flagship HMS Hood, received an Admiralty message instructing him to settle matters quickly or he would have French reinforcements from Toulon and Algiers to deal with. The British battleships then opened fire, the first shots fired by the British against the French since Waterloo.

The 15-inch salvos from Hood and other Royal Navy's capital ships overwhelmed the French vessels and the battleship 'Bretagne' blew up. Shore batteries and the French warships immediately replied and heavy shells began falling near the Hood inflicting minor damage.

The French guns were soon put out of action and extensive damage was observed to a number of their ships. Force 'H' then returned to Gibraltar and the Admiralty expressed deep regret to France for the tragedy in which almost one thousand four hundred French sailors had been killed. The Vichy government was outraged and ordered immediate reprisals against their former ally. Consequently, diplomatic relations with Britain were severed and French planes attacked Gibraltar but little damage was caused. France actually came very close to declaring war on Britain and bitterness lingers amongst the French to this day regarding this incident.

The next major action involving the Hood Almost a year later, proved to be her last. In 1941 Germany brought the Bismarck into service. This magnificent battleship represented the state of the art in German ship design and was the most powerful warship afloat. Grand Admiral Erich Raeder, head of the German navy was hopeful that the surface warships combined with the U-boats would successfully blockade and starve Britain into submission. Britain was barely holding her own at this stage of the war.

Bismarck was of comparable size and main armament to HMS Hood, but here the similarity ended. The German ship was far superior to the Hood, possessing excellent up-to-date electronics and superb armour protection. In effect, Bismarck was 20 years in advance of the Hood and this was reflected by the high quality technological developments which had taken place since the Hood was built.

In April 1941 the German navy planned to form a battle group combining Bismarck, Prinz Eugen, Scharnhorst, and Gneisenau, for Operation Rheinübung. This lethal squadron was the nucleus of the big battle fleet then being developed and would be capable of taking on even the most heavily defended convoys and would have the necessary speed to escape. These fast powerful vessels in the great spaces of the Atlantic Ocean would subject the Royal Navy to a trial of the first magnitude. (Scharnhorst would not be ready before July due to repairs required to her boilers.). So the Bismarck and the equally new Prinz Eugen practiced together while Captain Lindemann awaited his final orders. If all went according to plan, the mission would commence during the last week of April.

Churchill was aware of the danger this threat posed and ordered the RAF and Coastal Command to make every effort to sink them regardless of the risks involved. On 6th April, 1941, Gneisenau was put out of commission by a torpedo hit during a British Coastal Command torpedo strike. At dawn Flying Officer Kenneth Campbell VC piloted his torpedo bomber towards the Gneisenau. He was flying on his twentieth operational sortie and was known for determination and unwavering courage in the face of odds. Sighting the Gneisenau, he dived down to mast height and flew steadily through the blazing flak crossfire. (Brest harbour was the most heavily defended harbour in occupied France, with over 1 000 antiaircraft guns). Campbell would have to make sure his torpedo cleared the stone mole guarding the harbour. On his approach, he lined up his aircraft and aimed to drop the torpedo as he crossed the mole, thus giving it the longest possible run to the German ship.

He did not have much time from the moment of sighting the Gneisenau to the dropping of the torpedo. The distance was almost too close for his torpedo to run effectively. But, without hesitation he skimmed over the water through the concentrated barrage to drop his torpedo accurately towards the Gneisenau's stern. The aircraft and torpedo crossed the mole independently. Every anti-aircraft ship and land gun in the harbour was firing at him.

After releasing the torpedo, Campbell immediately pulled up to make a climbing turn, desperate to clear the surrounding hills and reach the sanctuary of low cloud. He was a steadfast man of resolution, a cool head and undoubted courage. He would have reached safety within moments. However, he was hit by a withering hail of fire. Nothing could have survived such a wall of steel and the doomed aircraft went out of control to crash in flames into the harbour waters. There were no survivors and this gallant crew was never to know the results of their courage and determination. Flying Officer Kenneth Campbell VC had done his job, his torpedo, running true

struck the Gneisenau below the water line and the ship began to list heavily. There was extensive damage and only the efficiency of salvage vessels prevented her from sinking. Had she been at sea, she most certainly would have been sunk!

Due to the crucial action of Kenneth Campbell VC, Operation Rheinübung was now reduced to Bismarck and Prinz Eugen. Then on 23rd April, the Prinz Eugen fell victim to a magnetic mine, which damaged her propeller shafts and ruptured the bulkheads in some of her fuel tanks, and had to go into dry-dock for repairs until 2nd May. As a result, the Bismarck's departure was delayed until the latter half of May. Grand Admiral Raeder insisted on sending Bismarck into the Atlantic convoy routes accompanied only by the new heavy cruiser Prinz Eugen. Raeder was influenced by his World War One experience where the idle German fleet became a breeding ground for communist revolutionaries that led to the mutiny at the end of World War One.

Facing Raeder and Lütjens was Admiral Sir John Tovey aboard his new flagship King George V. Tovey was commander in chief of the British Home Fleet based at Scapa Flow in the Orkney Islands just off the north-eastern tip of Scotland. Of course, Tovey had the disadvantage of being on the defensive from the outset. Bad weather and communication problems were big factors in the war at sea. Fifty-six year old Admiral Tovey had been in the navy since the age of fifteen, had commanded a destroyer at the Battle of Jutland in 1916, and had moved steadily up the ranks since then. Diminutive but brimming with self-confidence, he was a warm and humorous man who seldom spoke in anger. A popular commander who inspired great confidence in his subordinates, he wasn't afraid to make a decision or stick to it and was willing to stand up to his superiors if necessary. This did not endear him to Churchill, who fancied himself a naval strategist and preferred admirals who agreed with him. He had found one in Admiral of the Fleet Sir Dudley Pound, his aging and ailing First Sea Lord.

Tovey knew the Bismarck task force could have any one of several purposes, including the transporting of military stores for northern Norway. But there were two eventualities he had to guard against. One was a raiding expedition against Iceland; it was of enormous importance that this strategic island remain in British hands. The other and most likely was an attempt to break out into the Atlantic and prey on ocean convoys.

Early on the evening of 21st May, as soon as Tovey received the report that the Bismarck and Prinz Eugen were in the Bergen fjords, he ordered aerial reconnaissance from Greenland to the Orkneys, covering the area of a potential breakout, and he dispatched additional ships to guard

the two main escape routes into the Atlantic. The cruiser Norfolk was already patrolling the narrow Denmark Strait. Now he ordered the cruiser Suffolk, then in port in Iceland, to join her. The cruisers Birmingham and Manchester, patrolling the much wider Iceland-Faroes gap, were ordered to refuel immediately and return to their patrol. At the same time Tovey ordered Vice Admiral Lancelot Holland aboard the battle cruiser Hood to leave Scapa Flow with the brand-new battleship Prince of Wales and sail for Iceland, where they could move to intercept a breakout through the Denmark Strait. The fleet remaining at Scapa was warned to be ready to sail on short notice to reinforce the patrols in the Iceland-Faroes passage. As well as King George V, this included the aircraft carrier Victorious and would soon include the battle-cruiser Repulse. If Lütjens attempted an immediate breakout, the Home Fleet would be perfectly positioned to block him.

The Hood's greatest weakness was her lightly armoured decks. In her day, this saving in weight had given her a greater speed than other big warships, but a plummeting shell lobbed from long distance had a good chance of penetrating to her vital innards. And while Prince of Wales was well armoured above, she was a brand-new battleship less than three weeks out of the shipyard and still working out the kinks in her main armament. In fact, civilian crews from Vickers-Armstrong had been on board when she received orders to sail and were still working on the guns as she went into battle. In real battle conditions the likelihood of major malfunction in her heavy guns was very high. (Throughout the ensuing battle the Germans would continue to mistake her for her slightly older sister ship, the King George V, unable to believe so green a ship would be pressed into service.)

To make the most of the forces at his disposal, Admiral Holland hatched a daring plan. If he continued on his current course he would intercept the Germans during the darkest part of the night. But if he altered course to the north, he could intercept the Bismarck and Prinz Eugen at about 02 00 hours, just after sunset in these latitudes in late May. There were two important advantages to this strategy. The Hood would approach the enemy ships almost head-on at high speed and so could quickly close the distance (the combined speed of the two vessels would be roughly 56 knots). This would minimize the amount of time when the enemy's shells would be most dangerous (the closer the range, the flatter the shell's trajectory). Equally important, by emerging out of darkness while the enemy was silhouetted against the still-bright sky to the north-northwest, there was the possibility of surprise.

The Hood and Prince of Wales would take on the Bismarck while the Norfolk and Suffolk engaged the Prinz Eugen. Even if the Germans were not caught napping, it was a brilliant plan that gave the attackers every possible advantage, but at the price of exposing the onrushing British ships to the full main battery of the Bismarck while only able to return the fire with their forward turrets. But everything depended on the Bismarck's shadowers keeping her on their radar and being able to mirror every change in course and speed.

The mood on board the Hood and Prince of Wales was one of high anticipation. The German ships were now less than one hundred miles away, and Admiral Holland prepared for battle. He knew that although his two capital ships outgunned the Bismarck and Prinz Eugen by a margin of eighteen big guns to eight (all on the Bismarck), his superiority was very fragile. The Bismarck was faster and better armoured than either British ship. And she was more sturdily built and far better armoured than the aging Hood, launched just after World War One.

At 00 15 hours, Admiral Holland sent out the long-awaited signal: ‘Prepare for Action’. Aboard Hood, Prince of Wales and their escorting destroyers, the big white battle ensigns were raised. Most of the seamen were going into action for the first time. But they would have to wait somewhat longer. Around midnight the Bismarck had disappeared into a snow squall, and the Suffolk and Norfolk lost contact. Suddenly Holland's bold plan was in jeopardy.

Because the coast of Greenland prevented the Bismarck from turning to the west, Holland knew there were three possibilities: the Germans might continue on the current southwest course, they might turn or they might double back for the Denmark Strait. It seemed most likely that Lütjens would head south, toward the open Atlantic. On this assumption, Holland turned north and reduced speed. If he was right, he still might surprise the Germans with a head-on approach. If he was wrong, he was still keeping them in range. Meanwhile, he sent his destroyers to continue on the intercept course.

In fact, the Bismarck and Prinz Eugen had turned slightly to the west to the edge of the Greenland ice pack. As a result, Holland's destroyers passed within ten miles of the Germans without spotting them. Suffolk finally regained contact at 02 47 hours, and Hood and Prince of Wales immediately altered course to intercept and increased their speed. But now the Bismarck and the Hood were steaming on almost parallel south-westerly courses roughly thirty-five miles apart, with the British to the south of the Germans. Instead of a favourable high-speed, head-on approach, Holland was forced to close with the enemy slowly and from the beam. His other

options were too risky. If he tried to outrace the Bismarck and Prinz Eugen, then come round to meet them head-on, he could lose them altogether. The next time Suffolk lost contact might be the last. It now appeared the battle would finally be joined just after dawn.

Most of the men aboard the Bismarck and Prinz Eugen knew the name of the Hood, the bogeyman of their battle practices. But only a few of the more experienced sailors had caught a glimpse of her between the wars, when she came to represent British sea power in every corner of the globe. Until the beginning of World War Two, the Hood had never fired a gun in battle; her power had been implied, not realized.

Throughout the pale night Lütjens tried to elude his pursuers. He altered course, hid in squalls and snowstorms, even tried making a feint toward them. But each time he thought he had succeeded, there were the Suffolk and Norfolk on his tail. He was becoming frustrated and increasingly gloomy. How long could it be before other British ships appeared?

The crew on board the Bismarck spent half the night on watch. But the four hours between watches wasn't enough time to rest properly. Besides, who could sleep soundly while their ship was racing with the enemy and some sort of action seemed only a matter of time? Time passed very slowly. As the Arctic night waned, the sailors on Hood and Prince of Wales, who had already spent hours at their battle stations, were tense and exhausted, kept going only by adrenalin. They had already ridden an emotional roller coaster. Action was imminent, then delayed. Now they were about to go over the top again. In all, seven thousand officers and men on four great ships were racing toward a fateful meeting.

The captain of the Prince of Wales, John Leach, sat in his chair on the dimly lit compass platform and worried. Would his untried crew come through? Would there be effective fire from his balky big guns? He already knew that one of his forward 14-inch guns had proved defective and would likely be good for only a single salvo. How long would the other nine last? Just after 05 00 hours, Holland turned to the flag lieutenant next to him and gave the order: "Signal instant readiness for action": Moments later, the Hood flashed the message to the Prince of Wales.

Captain Lindemann nodded gravely as he read the message from Captain Brinkmann: shortly after 05 00 hours, the Prinz Eugen's hydrophones had picked up the sound of high-speed propellers. It seemed that more British ships were about to arrive on the scene. What would

Admiral Lütjens do? Lindemann asked himself. Would he try to outrun the enemy, or would he turn and fight? As the alarm bells indicating general quarters sounded through the Bismarck, Lindemann walked to the port wing of the captain's bridge and stared at the southern horizon. After a few minutes, dark smudges of smoke appeared - a sure indication of big ships making top speed. Then, at about 05 45 hours, mast tips came into view and began to grow rapidly into the unmistakable forms of warships. But what ships were these? And where had they come from so quickly?

From the bridge of the Hood, the dark shapes of the German ships could now be seen on the horizon. The weather was calm, but there was a fair swell. Because of the similarity of their silhouettes, it was almost impossible to tell German ships apart from such a distance. Admiral Holland himself was temporarily fooled, assuming the lead ship, Prinz Eugen, was his primary target. At 05 46 hours, the enemy was fourteen miles away. On their present slowly converging course, the lightly armoured decks of the Hood would remain exposed for far too long. So Holland ordered a sharp turn to the west, toward the Germans. This meant he would close more quickly, but neither he nor Prince of Wales would be able to use their after turrets on the enemy. The number of heavy guns he could bring to bear would thus be reduced from eighteen to ten. The First Sea Lord, Sir Dudley Pound, later described this as "going into battle with one hand when you have two". But Holland felt he had no choice. At 05 49 hours, he signalled Captain Leach to concentrate fire on the lead ship, which he still believed was the Bismarck.

The British opened fire at 05 52 hours. The sky above was overcast but the rising sun lit the horizon. From the size of the flashes followed by great clouds of dark-brown cordite smoke, it was obvious to any gunnery officer that the adversaries were indeed capital ships. But why didn't Lütjens respond? Was he hoping to outrun them? As the first salvoes from the British arced across the thirteen-mile gap, the gunnery crews aboard the Bismarck and Prinz Eugen waited in a kind of suspended animation for permission to fire.

"The Hood - it's the Hood"! One of the officers was heard to shout. But still Lindemann did not give the order. Admiral Lütjens was hesitating. "Enemy bearing two-ten-0. Distance 20 kilometres". The first salvo from the Hood fell harmlessly astern of the Prinz Eugen, throwing up great geysers of water close to the ship. But Captain Leach aboard Prince of Wales had realized their mistake before Admiral Holland, and without awaiting permission, opened fire on the Bismarck. The Hood and Prince of Wales, in close formation, were closing rapidly. "I will not let my ship be shot out from under my ass", Lindemann was heard to mutter. Still the admiral

waited. Finally, with tension among the gunnery officers and crews about to explode, the order came. "Permission to fire!"

Even deep within the heavily armoured ‘citadel’ of the Bismarck's middle platform deck, they could hear and feel that first salvo as the eight 15-inch guns fired in close succession. There was a distant rumble and an accompanying vibration, something like an earthquake. "Short," muttered the gunnery officer. Adjusting the angle and bearing of the guns, he ordered another salvo. "Long”. Even deeper inside the Bismarck the battle was also being waged to maintain maximum steam power.

For those on the bridge, in the fire control stations or, worst of all, in the turrets themselves, each salvo was a bone-rattling, mind-numbing experience - something like being next to a bomb going off. The roar was deafening, the sudden increase in air pressure made it almost impossible to breathe, and the thick cordite smoke choked and blinded. Unlike most modern forms of warfare, where the senior officers are far from the sting of battle, on board a battleship admirals and captains are more exposed than most of the ordinary sailors - and their positions are extremely vulnerable to an enemy hit.

The battle, but a few minutes old, was going poorly for Admiral Holland. Because he continued to keep his two ships in close formation, they presented a single target for the German gunners who were rapidly homing in. He had realised after his first salvo that he was concentrating his fire on the wrong ship, while both German vessels were blasting away at him for all they were worth. But it took his inexperienced gun crews inordinately long to switch fire. Meanwhile the Prince of Wales kept firing; her seventh salvo straddled the Bismarck.

The first German salvo had fallen just ahead of the Hood. The second fell just astern, and the splashes from the plunging shells blinded the forward rangefinders on the Prince of Wales, which followed close behind. Then a shell from Prinz Eugen's second salvo exploded at the base of the Hood's mainmast, touching off ammunition stored there. Shells loaded with cordite propellant started a spectacular fire that soon spread to nearby ammunition. As the fire continued to blaze, a blue pendant shot out the Hood's yardarm, signalling a 20 degree turn to port. Holland had decided he could wait no longer to bring all his heavy guns to bear.

On the Bismarck, gunnery officers, helped by the fire on the Hood, had found their range with their third salvo, which straddled. The fourth proved deadly accurate. As the Hood was still turning to port, one or more shells from this barrage - no one will ever know for sure - hit the pride of the British navy forward of her after turrets, pierced her thin deck armor and exploded somewhere inside the ship, probably in the 4inch magazine that then set off the 15-inch ammunition stored nearby. What followed was horrifying to friend and foe alike.

In the Bismarck's after fire control position, watch was still kept in case the Norfolk and Suffolk attacked from that quarter. (It is one of the puzzles of this famous battle that Admiral Holland failed to communicate his intentions to Admiral Wake-Walker on the Norfolk, who therefore never ordered his two ships to engage the enemy and simply watched the horrible events from a distance.)

The gun crew of Bismarck knew something big was happening when the gunnery officer's, emotionless voice intoning range and direction corrections suddenly blurted out, "My God, she's blowing up!" Other eyewitnesses involuntarily voiced their astonishment at what was happening to the British ship

At first the Hood was nowhere to be seen; in her place was a colossal pillar of black smoke reaching into the sky. Gradually. The bow of the battle-cruiser was projecting upwards at an angle, a sure sign that she had broken in two. A flash of orange came from her forward guns, although her fighting days had ended, the Hood was firing a last salvo, (a number of witnesses said the Hood blew up without a sound), but suddenly a sheet of flame shot around the front of the compass binnacle, the ship leaned sharply to starboard, then righted herself momentarily before listing even more heavily to port. There was no time to order abandon ship; as survivors headed for the starboard exit from the bridge, it was noted that Admiral Holland was making no move to leave his position. Signalman Ted Briggs had just started down the ladder when the water swallowed him and he was dragged under. He swam frantically to get away from the plunging superstructure, felt himself being sucked down and down, had virtually given up when suddenly he seemed to shoot to the surface. Although he'd gone over the starboard side, he came up on port. Fifty yards away from him, the bow of the ship was poised vertically in the water. Then he turned and swam for dear life. He didn't see her sink.

Able Seaman Tilburn was at his antiaircraft position on the Hood's boat deck when the Bismarck's fatal salvo hit. A shell tore through the deck beside him, turning his neat and ordered world into a maelstrom of twisted steel and flying splinters. Hardly had he managed to get back on his feet than he was engulfed in a cloud of dense black smoke and then blasted by a furnace of flame. There was nothing to do but make for the icy water. As he tore off his gas mask and tin hat, he saw an ammunition locker flying in his direction and jumped just in time to avoid it. As he fought the sinking ship's suction, one of the radio aerials lassoed his boots. He managed to get out his pocketknife and cut his feet free. When he surfaced, the Hood was gone. Midshipman Dundas had the most amazing escape of all. From his position in the spotting top, the highest manned point on the ship, he was literally washed through one of its windows and into the sea as the Hood sank.

On the British and German ships, regardless of their rank or experience at sea, the few men who saw the last moments of the Hood were transfixed and would take the scalding images to their grave. First a huge pillar of flame shot up toward the sky, followed by a mushroom cloud of smoke. Then pieces of the ship were visible sailing through the air. (That final salvo was probably involuntary, the last gasp of the legendary ship as circuits closed by themselves.) Captain Brinkmann aboard Prinz Eugen saw shells exploding like fireworks in the midst of the billowing smoke, showering white stars. It reminded him of a celebration for the Fűhrer's birthday. Accounts differ, but none is more graphic than that of Esmond Knight aboard the Prince of Wales, who had a ringside view from his antiaircraft fire control station: "There had been a rushing sound which had ominously ceased, and then, as I looked a great spouting explosion issued from the centre of the Hood, enormous reaching tongues of pale red flame shot into the air, while dense clouds of whitish-yellow smoke burst upwards, gigantic pieces of brightly burning debris being hurled hundreds of feet in the air. I just did not believe what I saw - Hood had literally been blown to pieces". From the Hood's opening salvo, the battle had lasted just six minutes.

Having split in two, the stern and bow sections of the Hood momentarily pointed vertically in the air before disappearing beneath the waves. Captain Leach aboard the Prince of Wales had to do some fancy manoeuvring to dodge the Hood's wreckage, and in doing so put himself directly in the sights of the Bismarck's guns. But Leach's gunners had found their range also. As his ship charged toward the Germans, his eighth or ninth salvo found the mark. But there was no

time to savour this minor triumph. A shell from the Bismarck's next blast bowled through the captain's bridge, killing everyone except Leach, his chief yeoman of signals and his navigating officer, who was wounded. Because the shell did not explode, few people on board were immediately aware of this catastrophe. Even one deck below in the plotting room, no one realised anything was amiss until blood dripped onto the chart from the voice pipe that communicated with the bridge.

Esmond Knight fell victim to the debris sent flying by the shell that mauled the bridge. He remembered hearing "a great rushing noise, like the approach of a cyclone, and having quite an irrelevant dream about listening to the band in Hyde Park, and then being conscious of a high ringing noise in my head and slowly coming to". When he regained consciousness he could hear voices but could see nothing. The horrible smell of blood filled his nostrils as dead bodies were lifted off him and he was helped down to sick bay. A shell splinter had blinded him. (He did recover his sight and resumed his acting career after the war, appearing in a minor role in the movie Sink the Bismarck!)

Everyone seemed to realise what was happening; Hood had taken a mortal blow. Those able to see the action from Prince of Wales, Norfolk and Suffolk, as well as their German adversaries, could not believe their eyes - the Mighty Hood, most famous of all warships, had just been devastated by a massive explosion. Large pieces of the ship including the turret and main mast were seen hurtling through the air.

It truly was nightmarish to all who watched. The aft portion of the ship, some 300 to 400 feet, had been laid waste - a mass of largely unrecognisable steel and twisted framework. The eyewitnesses watched in horror as the stern, or what was left of it, rolled over to port and immediately sank. The forepart swung high into the air at an angle between 45 degrees and vertical, pivoted about and began to sink rapidly.

Prince of Wales had to take immediate evasive action to avoid Hood's sinking wreckage. This resulted in her loss of aim and the emergency turn also placed Prince of Wales directly in the sights of the enemy ships. The close formation that the British ships had taken up now meant that Bismarck's gunners could quickly and accurately switch fire to the Prince of Wales. The situation had dramatically reversed. Bismarck's elated gun crew focused on the battle once more and with deadly accuracy scored several direct hits on the Prince of Wales. The first 15 inch shell to find its mark went straight through the compass platform, killing all personnel

except Captain Leach, and the Navigating Officer. It also wrecked most of the control and communications instrumentation.

Four more 8 inch hits from Prinz Eugen and two more 15 inch hits from Bismarck soon followed. These included a 15 inch hit below the waterline and beneath the armoured belt. Fortunately for Prince of Wales, this shell, which was potentially fatal, failed to explode. With her fighting capacity drastically reduced she was soon in dire straits and now became the target for the concentrated fire of both enemy ships.

Bismarck's salvos continued to thunder out every 20 seconds; Prinz Eugen's every 10. Captain Leach realised that if he continued much longer in this unequal battle, he might soon deprive the Royal Navy of a valuable ship without inflicting further damage on the enemy. By this time the Prince of Wales was within range of Prinz Eugen's torpedoes. He, therefore, made the decision to lay down a smoke screen and break off the engagement.

This decision was also prompted by the fact that 'A' turret had jammed and was partially flooded, 'Y' turret was out of action and 3 of the 14 inch guns had jammed in elevation. The ship was clearly not in fighting condition. Despite the numerous hits sustained and the ever increasing problems with her guns Prince of Wales did manage to score three hits on Bismarck - one of which was to prove critical to the outcome of Operation Rheinübung. The battle had only lasted 24 minutes and British casualties were heavy. The Germans suffered no casualties.

On the bridge of the Bismarck, Captain Lindemann could barely contain his rage. But his long years of service overcame his urge to throttle Lütjens, admiral or not. As soon as Prince of Wales had turned away, the fleet commander had ordered his two ships to cease firing. He was allowing the wounded British battleship to get away rather than closing in for the kill. Lindemann protested in vain, his anger straitjacketed in formal military tones. Every fibre in the captain's being told him to give chase. This was what he had been trained for all his life. But Lütjens was unmoved. His orders were to engage British capital ships only if unavoidable. His mission was to raid commercial shipping, not get into pitched sea battles. Besides, the Bismarck herself was wounded, and that had to be his primary concern.

Unbelievably, Hood was gone. All that remained was a morass of floating debris and a huge oil slick. Only three of her crew survived, Midshipman William Dundas (who ironically was killed

after the war in a car accident), Able Seaman Robert Tilburn and Signalman Ted Briggs. There was no trace of anyone else living or dead; all had perished. One week before the 25th anniversary of the Battle of Jutland she blew up just as the 3 battle cruisers at Jutland had. The battle had been a shocking German victory.

Bismarck continued on her south-westerly course shadowed from a respectable distance, by Norfolk, Suffolk and now the Prince of Wales. Aboard Bismarck, Admiral Lütjens was satisfied with the outcome. The Bismarck had sunk the pride of the Royal Navy and given a terrible thrashing to its newest battleship. She could have returned to Germany satisfied with what amounted to a resounding triumph. Her prestige and striking power would have been immensely enhanced. Potentially greater success could later be achieved with a combined breakout with the Gneisenau, Scharnhorst, and possibly even the Tirpitz added to the present squadron of Bismarck and Prinz Eugen.

However, the damage assessment revealed that Bismarck had been hit three times by 14 inch shells from Prince of Wales. One shell had penetrated an oil fuel tank causing a serious oil leak and contaminating the oil in adjacent tanks. Another had struck the side armour amidships, causing flooding and putting one dynamo and one boiler out of action to reduce her maximum speed by two knots. The third hit caused only minor damage. Admiral Lütjens decided to make for occupied France where repairs could be carried out. As a result, Bismarck's proposed Atlantic sortie was abandoned. Prinz Eugen, unharmed in the battle, should attempt commerce raiding on her own, whilst Bismarck was to proceed to the port of Brest.

Returning to the Hood survivors, the three men had each found their way to rafts floating in the wreckage. They then managed to link up with one another and for nearly four hours they fought off the killing effects of hypothermia. Besides being thoroughly soaked, they were caked with oil and in a state of shock. As they clung on in the icy sea, they watched the severely mauled Prince of Wales steaming past attempting to continue the battle. They could also see smoke from Norfolk quite a way off. The men eventually drifted apart and began to give up hope. Fortunately, a destroyer arrived on the scene to pick up the three men. She searched for other survivors, found none, and then departed the scene.

Throughout the world the news had a shattering impact on all who had remembered this magnificent ship gliding gracefully into their harbours. Just as people today can tell you where they were when President Kennedy died so to in wartime do they remember the Hood’s end?

Many felt the war was lost, if Hood could not stop the Bismarck what could? What now lay between this mighty German battleship and the destruction of the Atlantic convoys?

It is difficult for anyone not living in Britain then to comprehend the impact of this event on British pride and morale. It was as much of a shock and humiliation as the Japanese attack on Pearl Harbor would be to Americans seven months later. In his book 'Pursuit', Ludovic Kennedy, at sea on a British destroyer at the time, pulls no punches: "For most Englishmen the news of the Hood's death was traumatic, as though Buckingham Palace had been laid flat or the Prime Minister assassinated, so integral a part was she of the fabric of Britain and her empire. Admiral Wake-Walker, announcing the tragedy to the Admiralty and the world with his laconic signal "Hood has blown up", felt compelled to classify it 'Secret', as though somehow this might prevent the dreadful news reaching Hitler. Many people simply did not believe it.

The news reached Winston Churchill at Chequers, the country home of British prime ministers. Among his houseguests was Averell Harriman, then American ambassador to the United Kingdom. Churchill was awakened at 07 00 hours, Saturday morning with the awful news. He got up, went to the end of the corridor where Harriman was staying and told him, "The Hood has blown up, but we have got the Bismarck for certain". This was a typical bit of Churchillian bravado, for he was anything but confident of the outcome. All day Saturday he buried himself in paper-work, but the German battleship was never far from his mind. "Only one scene riveted my background thoughts". Churchill later wrote; "This tremendous Bismarck, 45 000 tons, perhaps almost invulnerable to gunfire, rushing southward toward our convoys, with the Prinz Eugen as her scout. As long as we held fast to the Bismarck we could dog her to her doom. But what if we lost touch in the night? Which way would she go? She had a wide choice, and we were vulnerable almost everywhere".

Nearly every officer on duty in the Admiralty was stunned. Most of them had served in the Hood and remembered her as the pride of the Royal Navy. Now that she was gone, resolution set in to avenge her death at all costs. They, therefore, redoubled their determination and plotted Bismarck's death. Admiral Summerville's Force "H" of which Hood had recently been the flagship was ordered to sea from Gibraltar. The battleships Rodney and Ramillies broke off from convoy escorting duties, and battleship Revenge sailed from Halifax.

Two boards of inquiry were convened on the loss of the Hood. Both inquiries concluded that the cause of the Hood's destruction was due to one or perhaps even two 15 inch shells that pierced

through the thin deck armour to set off the magazine. However, not all experts agreed with the findings, causing some lingering doubts to remain to this day of the Royal Navy's largest loss of life on any ship during World War Two.

In the final analysis, the patriotic emotion that swept the nation may be concluded as a fitting epitaph and tribute to *'The Mighty Hood'*.

CHAPTER SIX

THE BISMARCK

Within minutes of the violent destruction of the pride of the British Royal Navy, an enraged Winston Churchill gave the memorable command to “sink the Bismarck”! This mobilised the British Home Fleet into the greatest sea chase of the war.

It was perhaps fortunate for Britain's naval leaders at the time that public anger could be directed at the immediate cause of the disaster - the Bismarck - instead of being allowed to dwell on deeper responsibilities, such as those which had sent into modern battle a ship whose design had already proved fatal in an earlier war. It was even more fortunate for them that, after a chase holding all the thrills of a classic game of hide and seek, Bismarck was tracked down and sunk.

On 24th August, 1940, on the quarterdeck of the newest battleship in the German Fleet, the crew assembled for the official commissioning of The Bismarck into the German Navy (Kriegsmarine). Captain Ernst Lindemann addressed his crew and quoted Prince Otto von Bismarck, who had united Germany in the nineteenth century and turned it into a great European power: "Policy is not made with speeches, shooting festivals, or songs, it is made only by blood and iron". It was due to such words, followed by actions to match them that Bismarck became known as the ‘Iron Chancellor’. Now an iron ship bore his name. Eighteen months earlier on 14th February 1939, a huge crowd had watched as Frau Dorothea von Loewenfeld, granddaughter of the Iron Chancellor, had launched the ship.

By the time of the Bismarck's commissioning, no one in Britain was downplaying the German naval threat, least of all Prime Minister Winston Churchill. The war at sea was going from bad to worse for Britain. German submarines were creating havoc with Atlantic shipping. The British Admiralty remained preoccupied with the very real possibility of a Nazi invasion. Meanwhile all eyes were on the skies as the Battle of Britain raged, diverting attention from the devastating loss of merchant ships that was rapidly threatening Britain's ability to survive.

The Bismarck was fast (30 knots) and sleek, with an elegant silhouette and a jaunty flared bow. More than 820 feet long, 118 feet wide, and a displacement of 44 734 tons (48 626 when fully loaded). Her eight 15-inch (380-mm) guns in four twin turrets were the biggest ever mounted on a German warship and made her more than a match for the firepower of any single battleship or battle-cruiser in the entire British fleet.

Defence is at least as important as offense on a battleship. So, not surprisingly, among the most heavily armoured areas were the four big gun turrets, A, B, C, and D working from forward to aft and known as turrets Anton, Bruno, Caesar and Dora. Here the armour ranged in thickness from 5 to 14 inches. Elsewhere the thickness of the protection depended on the importance of the area being protected. The conning tower and communications tube leading between it and the armoured decks were almost as heavily protected as the big turrets. The vital innards, including the three sets of geared turbines, the twelve high-pressure boilers and the ammunition magazines were located within the heavily armoured citadel which occupied roughly 50 percent of the below decks space and was protected by an armoured deck.

In early March, 1941 the Bismarck went to the Gulf of Danzig for final sea trials and battle practice. During these final exercises the Bismarck was joined by the brand-new heavy cruiser Prinz Eugen, which was to provide escort on her first foray into the Atlantic. Once there, the two ships were to link up with the battle cruiser Gneisenau, still in the harbour of Brest, and prey on British shipping.

Captain Lindemann was impatient for the Bismarck's first mission, but he was also apprehensive about the officer under whom he would serve. Lindemann probably consoled himself with the knowledge that Admiral Lütjens had already proven himself in the war at sea. He had led the highly successful commerce raiding expedition earlier that year when the Scharnhorst and Gneisenau had broken out into the Atlantic through the Denmark Strait. With the Bismarck's first mission only days away, Adolf Hitler visited the ship on 5th May. The Fűhrer was nervous about risking German ships in the Atlantic, fearful of the humiliation he would suffer if any were sunk by the British. Raeder had not informed his commander in chief that the Bismarck was scheduled to depart on 18th May.

After the troop inspection, Hitler toured the ship. He seemed attentive and interested but said almost nothing. Four hours after boarding the Bismarck, Hitler and his party left. Now Lütjens and Lindemann could get on with final preparations for their mission, code-named Rheinübung - Exercise Rhine. Their orders were to steam through the Danish Islands and enter the Norwegian Sea through the passage between Jutland and the southern coasts of Sweden and Norway. They were then to proceed northward along the Norwegian coast and into the North Sea, breaking out through the Iceland-Faroes passage without being detected by the enemy. Already oil tankers and resupply ships were steaming to prearranged positions in the Atlantic

and the Arctic. Unlike previous raiders, the Bismarck and Prinz Eugen had permission to attack escorted convoys.

On 17th May 1941, the Bismarck took on her final supplies and fuel at Gotenhafen. At one point a fuel hose ruptured and by the time the problem was corrected, the battleship was 200 tons short of fuel. With a storage capacity of 8 000 tons, this shortfall seemed at the time a tiny detail of no consequence. On board were two thousand two hundred and six men.

The British Admiralty was not ignorant of the threat posed by the Bismarck, but Churchill continued to believe that she would not put to sea until the Tirpitz was also ready. Nonetheless, British intelligence had been following the battleship's progress from shipyard to sea trials with intense interest. They knew she was ready for action. But the ocean was huge and although they had noted increased German reconnaissance flights over Iceland's Denmark Strait, suggesting the Bismarck might take that route into the Atlantic, they still had no real idea where she intended to go, or when.

At 02 00 hours on the morning of 19th May, 1941, Exercise Rhine had begun. Captain Lindemann announced over the ship's loud-speakers that the purpose of their expedition was to reach the Atlantic and sink as much British shipping as possible over a period of several months. Lindemann's men had no knowledge of the elaborate planning that had led to this moment. They only knew that action was at hand.

The Bismarck sliced invisibly through the darkness toward a late-morning rendezvous with Prinz Eugen in the western Baltic. Prinz Eugen, under the command of Captain Helmuth Brinkmann, had departed Gotenhafen the previous evening. The day dawned cloudy and remained overcast, making aerial reconnaissance unlikely - a good omen. The two ships met and were joined by an escort of two destroyers and a flotilla of minesweepers. The next morning, 20th May, they entered the Kattegat. Around 13 00 hours off Marstrand, Sweden, the Swedish aircraft-carrying cruiser Gotland loomed into view. She steamed along parallel to the German force while she remained in Swedish waters, and then dispatched a radio message. This was exactly what Lütjens had wanted to avoid. Neutral Sweden was a nest of spies and informers.

In the radio room aboard the Bismarck, the intelligence staff listened intently for a transmission from the Swedish ship. Sure enough, when Gotland's routine report was decoded, it informed

the Swedish admiralty of the German presence. Shortly thereafter, Lütjens notified Group North that the secrecy of his whereabouts had been compromised. Indeed, it was only a matter of hours before the British naval attaché in Stockholm, heard the news, which he promptly relayed to London. Near sunset when the ships passed Kristiansand, a second report of the Bismarck's position was making its way to London. A member of the Norwegian underground spotted the force through his binoculars, and soon a hidden radio transmitter was sending news to London of two German battleships with escorts heading west toward the North Sea.

Around noon the next day, 21st May, the Bismarck and the Prinz Eugen entered the protected fjords near Bergen so that Prinz Eugen could refuel. This stop was not part of Lütjens' operational orders; the plan was for both ships to refuel from the tanker Weissenburg already waiting for them in the northern part of the Norwegian Sea. But Prinz Eugen had a much more limited range than the Bismarck. Refuelling her now gave Lütjens additional flexibility should he decide to break out right away. Nonetheless, his decision seems ill-considered. The two ships sat all day under clear blue skies in the Norwegian port closest to British airfields, as if waiting to be spotted by British aerial reconnaissance - which is exactly what happened. Around 13 15 hours, a Spitfire flying over Bergen photographed the ships. Soon the British Admiralty knew exactly where the Bismarck was, but what she was doing was another question.

During the warm and sunny afternoon, Prinz Eugen's tanks were topped up while the Bismarck's camouflage was painted over with a dull grey paint that would help her disappear into the Atlantic. Why didn't Lütjens take advantage of this time to refuel Bismarck as well? This criticism has been echoed by many historians. In the Royal Navy it was standard procedure to refuel ships at every opportunity - a policy that makes good sense given the unpredictability of war. Bismarck had left Gotenhafen 200 tons short because of the ruptured fuel line. What if Lütjens didn't have time to refuel from the tanker waiting for him in the Norwegian Sea? Once in the Atlantic, every ton became precious. The excuse that such a refuelling was not in the day's operational orders shows an incredible inflexibility on the part of a seasoned commander. The Bismarck left Bergen with her fuel tanks down by about 1 100 tons.

Around 19 30 hours, the Bismarck and the Prinz Eugen resumed their northward journey. It was now clear that the British knew something was up. That morning German intelligence had deciphered a British radio transmission ordering RAF planes to be on the lookout for two German battleships heading north. The British were on his trail. Fortunately for him, however,

they were still in the dark as to Bismarck's intentions. Nor would they discover for some time that the task force had left Bergen.

Early the next morning, Thursday 22nd May, the Bismarck and Prinz Eugen bade farewell to their escort of destroyers and minesweepers. Now they were on their own. All day the weather played into Lütjens' hands: haze and an overcast sky gave way to fog and then rain. With ample cloud cover and low visibility, it would be almost impossible for British planes to spot them.

While the Bismarck steamed northward, Admiral Erich Raeder went to the Berghof, Hitler's mountain retreat near Berchtesgaden in south-eastern Bavaria, for a naval conference with the Fűhrer. Present at the meeting were Hitler's senior general staff officers. Raeder gave Hitler a wide-ranging briefing on the state of the war at sea; almost casually mentioning that the Bismarck and Prinz Eugen had left Bergen the day before on a commerce-raiding mission into the Atlantic. This was the first the Fűhrer had heard of Exercise Rhine.

Hitler was visibly upset. What about the danger to his new battleship. He and Admiral Lütjens had discussed this very possibility only two weeks before during his visit to the ship. Raeder knew his leader feared the blow to his prestige should the Bismarck be sunk. Now he carefully explained why it would be a mistake to recall the ships. Such a move would have a terrible effect on naval morale. Months of complex planning had gone into the operation. Besides, given Lütjens' previous successes, there was every reason to expect that this mission would bring even greater glory to the Fatherland. Raeder wisely did not mention that the British had already spotted the ships off Norway and were already looking for the Bismarck. After a heated discussion, Hitler reluctantly agreed to let the mission proceed.

It was not until Thursday evening that Tovey finally discovered that the birds had flown the Bergen coop late that afternoon. A daring low-level reconnaissance flight through fog and low-lying cloud had found the two German ships gone from the fjords where they had last been seen. At 22 45 hours, Tovey led his fleet out of Scapa Flow. Accompanying his flagship, King George V, were the aircraft carrier Victorious, 4 cruisers, and 7 destroyers. He ordered the Repulse to sail from the Clyde to join this force, which would take up a position from where it could support the forces covering Bismarck's two possible escape routes. Hood and Prince of Wales were already lying in wait off Iceland. Suffolk was on her way to join Norfolk in the Denmark Strait, and Arethusa was sailing to strengthen the forces patrolling the Iceland-Faroes

gap. Assuming the Bismarck was spotted and followed, at least two capital ships, plus various cruisers and destroyers, could quickly move to challenge her.

Before midnight on 22nd May 1941, Admiral Lütjens received three encouraging radio messages from Group North. The first referred to a communication he had received earlier that day: "Assumption that breakout has not yet been detected by the enemy confirmed". The second reported that Luftwaffe aerial surveillance of Scapa Flow had revealed "4 battleships, 1 possible aircraft carrier, 6 light cruisers, and several destroyers. Thus no change from 21st May, and passage through the Norwegian Narrows not noticed"! This was horribly inaccurate. The Luftwaffe had been fooled by one of the oldest tricks in the book. Two of the 4 battleships were dummies made of wood and canvas. Had Lütjens known that Hood and Prince of Wales had already been deployed, he would certainly have thought twice about proceeding with an immediate breakout. If Lütjens retained any doubt about the course of action he had decided on, this must now have been dispelled. At 11 32 hours, not knowing that the entire British Home Fleet was now moving to intercept him, he ordered a course change to the southwest, direct for the Denmark Strait.

Eleven British convoys, including a troop convoy of more than twenty thousand men, were about to cross the Atlantic. It would be up to the Home Fleet to intercept the Germans before they could get out into the Atlantic shipping lanes. If not the consequences would be very serious.

By noon the next day, 23rd May, the Bismarck and Prinz Eugen were sailing due north of Iceland and were about to enter the Denmark Strait. The bad weather still concealed them; perhaps Lütjens' gamble would pay off. But the admiral and Lindemann knew this was the most perilous phase of the breakout. A British minefield stretched from the Horn of Iceland toward the Greenland coast, effectively narrowing the aperture at its narrowest point to no more than 30 to 40 miles.

In the early evening the weather conditions in the narrowest part of the Denmark Strait favoured the patrolling British heavy cruisers Norfolk and Suffolk under the command of Rear Admiral Frederick Wake-Walker aboard Norfolk. To the north, along the icebound coast of Greenland, the water was clear and the visibility good. But to the south along the Iceland coast lay fog. The British took full advantage of these conditions as they sailed back and forth along the route the

Germans would have to take. Captain Robert Ellis on the Suffolk sailed ahead of Norfolk, since his ship's new radar could sweep a thirteen-mile radius.

At 19 22 hours, the Bismarck's alarm bells sounded. Her hydrophones and radar had picked up a ship off the port bow. This was Suffolk, also racing on a southwest course but traveling along the edge of the fog bank. Briefly the three-stacked silhouette of the British cruiser came into sight before it plunged into the mist. There was no time to get a bearing and fire. Aboard Suffolk, the starboard after lookout was scanning his sector with his binoculars for what must have seemed like the thousandth time since he had come on watch. The lookout didn't want to sound a false alarm, but he didn't want to make a mistake, either. Suddenly a great black shape loomed out of the mist no more than seven miles away. "Ship bearing green one-four-o he shouted". Then a second ship appeared, and he shouted the alarm once again.

Captain Ellis brought Suffolk hard over and she heeled heavily to starboard as he headed into the fog, while alarm bells rang and sailors rushed to action stations. Arriving safely in the fog bank, Suffolk slowed down and waited for the Bismarck and Prinz Eugen to pass her before taking up a position to the rear, just within radar range. At 13 miles, this meant the Bismarck's guns could reach her at any time. The cruiser was roaring along at 30 knots, virtually top speed, and the vibration was tremendous. It was all she could do to keep up with the German ships, which had increased speed.

Meanwhile, Norfolk had been alerted and was racing back through the fog to join Suffolk. But her captain misjudged his relative position and emerged six miles in front of the Bismarck, with the great grey leviathan closing fast. Before Norfolk could escape back into the mist, five salvoes straddled her. One shell bounced on the water and ricocheted off the captain's bridge. But only shell splinters came on board and no one was hurt. The jolts from the firing of Bismarck's big guns had put her own forward radar out of action. This meant she was now blind to what lay ahead. Admiral Lütjens ordered Prinz Eugen to take the lead, as the two ships raced to escape the British. The admiral must have felt discouraged. His breakout had been detected, and in the radio room his intelligence officers had intercepted and decoded a stream of wireless messages from the British ships, advertising his position. But surely the big British ships that could really threaten him were far away. Late yesterday they had still been at Scapa Flow. If only he could shake these two pursuers, he could continue his mission, take on oil from a tanker south of Greenland and then lie low until things died down.

But as the four ships raced toward the open Atlantic, Lütjens gradually realized that his pursuers were relying on more than visual contact to keep track of him. Hard as he tried, he could not shake them off. Whenever he altered course, the British ships did, too. When he tried a high-speed turn to come back and surprise them, he emerged from a rain squall to find the sea empty. He didn't know it, but the problem was Suffolk's radar, which was far superior to anything the Germans had.

On board both the British and German ships, everyone was awake, poised and waiting for something to happen. Three hundred miles to the south, Vice-Admiral Lancelot Holland aboard the Hood had received Norfolk's wireless report that the Bismarck had been flushed. Already the Hood was racing on a converging course that would bring him within range early the next morning. The Bismarck's first battle was about to begin.

The encounter with the Hood and the Prince of Wales has been well documented in the previous chapter.

Now Bismarck’s battle damage had to be assessed. In the din of battle only a few on board the German battleship realised she had been damaged. A shell from the Prince of Wales hit beneath the armoured belt, penetrating to the torpedo bulkhead where it exploded. This caused flooding in the forward generator room on the port side and some slow seepage of water into the forward port boiler room. (The port boiler room was subsequently shut down as a precautionary measure, reducing the ship's maximum speed to about 28 knots.) Soon damage reports reached the bridge, and with each report Admiral Lütjens grew gloomier and gloomier.

Most serious was the hit forward, where a shell had passed clean through the ship. The holes in the hull were just above the waterline but not above the wave thrown up by the bow, and water was pouring in. The shell had damaged the main transverse bulkheads separating these adjacent compartments, and both began to flood rapidly. By the time Bismarck ceased firing, 1 000 tons of seawater had flowed into the ship, putting considerable pressure on a bulkhead separating compartment, which had to be shored up. The holes in the bow were patched with collision mats, which inhibited but did not stop the flow of water. Because of the flooding, the Bismarck was down at the bow and listing to port, at times lifting the starboard propeller partly out of the water. To correct the trim, two ballast tanks were flooded aft. But there was nothing the damage control teams could do about the main problem: the flooding and other damage had cut off access to the forward fuel tanks containing 1 000 tons of fuel. Suddenly Lütjens' decision

not to refuel at Bergen loomed ominously large. On neither German ship had there been a single casualty.

When the damage control teams had completed their work, the German battleship was handicapped but still formidable. She was still taking in water, and her available fuel was seriously reduced, but enough remained to get her to ports more than 1 000 miles away. The damage to her electric plant cut her reserve capacity in half, but she was still able to operate with full electrical power. Seawater in the electrical plant threatened to seep into the other two forward boiler rooms, further reducing her top speed. She was also trailing oil in her wake, which would make her easier for aerial reconnaissance to spot and also reveal to enemy eyes that she had been damaged. But all her artillery was intact. Her gunnery had proved extremely accurate, and the crew had performed with the greatest of skill.

Now that the full extent of the Bismarck's wounds was clear, Admiral Lütjens was faced with a tough decision. Immediately following the battle he'd elected to steer a course toward St. Nazaire, France. For now, commerce-raiding was out of the question. The damage was too serious to be repaired at sea, but if he could get to France, future operations would be much easier. Should he turn back toward the Denmark Strait, or make a run eastward through the Iceland-Faroes gap? Either way he would likely be met by more British ships, which he could now safely assume were already gathering like pack wolves for the kill. The open sea offered more room to manoeuvre and more chances of escape than the shorter, narrower route back to Norway. As he moved south, the nights would become longer, providing more chance for evasive manoeuvres. If he could shake his shadow, perhaps he could still link up with one of his tankers, then lie low until the British were forced to leave the field to refuel. He decided to continue for France. Had he known where the British ships actually were, he would undoubtedly have changed his mind.

Admiral Raeder phoned Hitler and told him what had happened. The news was a tonic for the ever anxious Fűhrer. He was elated and praised the navy to the skies. This was a great victory for the Reich, which Dr. Goebbels and his propaganda machine could exploit to maximum effect. Raeder shrewdly didn't report to Hitler the damage to the Bismarck and his concern about Lütjens' decision to steer for France, which he judged risky. Raeder even considered issuing a recall order that would have forced Lütjens to head immediately for Norway. But finally he decided to let the man on the scene make the decision.

The general euphoria aboard the Bismarck and Prinz Eugen at their spectacular victory soon gave way to a more sober mood. The flagship was damaged and they were still being shadowed by the Suffolk and Norfolk, now joined by the damaged Prince of Wales. Meanwhile, Admiral Lütjens was left to consider his options. If he retained any faith in German intelligence, it must have been dashed by the unexpected apparition of his attackers that morning. Perhaps other ships were just over the horizon, ready to pounce. If only he could elude that infernal British radar.

Four hundred miles away, Admiral Tovey also contemplated his options. The Admiralty had already begun detaching battleships and cruisers from patrol or convoy duty and sending them to join the chase. But the nearest of these were still much farther away than his own fleet. His force was more than a match for the two German ships, but first they had to be caught. This presented Tovey with a problem; he still didn't know which way the Germans would go. Perhaps they would head back to Germany as soon as the opportunity presented itself. Most likely they would make for France. But he could assume none of these possibilities, and had to allow for all of them. He could only hope that the Bismarck would not lose her shadowers before he could bring his own force to meet her.

Still Lütjens could not shake the three ships that dogged his tracks. Despite this situation, morale aboard Bismarck and Prinz Eugen remained high. They had sunk the mighty Hood, escaping with little apparent damage and without the loss of a single man. The Bismarck was still making good speed - 27 to 28 knots, but labouring with a heavy bow trim and a slight list to port. However, there seemed to be problems with the ship's radio - Lütjens had received no answers from Group North to his repeated messages. He had reported the victory over the Hood and had indicated his intention to part company with the Prinz Eugen and then head for France and the dry-dock of St. Nazaire that could handle his repairs. More serious was the fuel situation. Shortly after 12 30 hours, Lütjens ordered a reduction in speed to 24 knots and a course change to the south.

Five hundred miles to the southeast, the Nelson class battleship Rodney, with four destroyers, was escorting the troop ship Britannic to Halifax. The Rodney received news of the Hood's sinking over the ship's wireless. Just before noon, a signal was received from the Admiralty giving the enemy's position, course and speed. The Britannic was to proceed with one destroyer to Halifax. At 14 00 hours, the battleship and three destroyers headed north at full speed. The battleships now included the Revenge, and the Ramillies. Also called were the cruisers

Edinburgh, patrolling near the Azores, and London, escorting another convoy. Finally, and most important, was the inclusion of Force H, which had already left Gibraltar and moved into the Bay of Biscay to cover a troop convoy. Force H, consisting of the carrier Ark Royal, the battle cruiser Renown and the cruiser Sheffield, along with six destroyers.

Aboard King George V, the commander in chief of the Home Fleet knew his job was to bring the Bismarck to account any way he could. Although Admiral Tovey had received reports that the Bismarck was trailing oil, he had to assume the damage was not serious. He interpreted her change of course to the south and reduction in speed to 24 knots as evidence Lütjens was unaware that a powerful British force was moving to intercept. But he worried that at any time the Germans might put on a burst of speed, shake their shadow and disappear into the void of the mid-Atlantic. However risky, he felt he had to try to slow her down. The only weapon at hand that was capable of accomplishing this goal was the aircraft carrier Victorious. But Tovey, must have held grave doubts about using this newly commissioned ship and her untested crew in such a dangerous fashion. She had only fifteen operational aircraft on board - nine 3seater Swordfish torpedo bombers and six 2 seater Fulmar fighters. Most of the aircrews had never flown at sea, were still learning the ropes. Now, on their first high-seas mission, they were being asked to take off in unpredictable weather, fly to the extreme limit of their range and attack an enemy ship that had just sunk the most famous warship in the Royal Navy. And they were being asked do this in slow-moving Swordfish - known as ‘stringbags’ because of their carrying capacity and apparent fragility. Fixed-wheel biplanes with open cockpits that looked like relics of World War One and whose top speed when armed was barely 100 knots.

Just after 15 00 hours, Tovey issued the order for Victorious and four cruisers, to leave his battle fleet and steer a course that would get the carrier within 100 miles of the Bismarck and Prinz Eugen before dusk. As Tovey watched the untried aircraft carrier fade into the distance, he must have wondered whether he was sending the young flyers on a suicide mission.

Aboard Prinz Eugen, Captain Brinkmann took a pull on his ever-present cigar and wondered just what Admiral Lütjens was thinking. Early that afternoon the admiral had signalled his intention to stage a breakaway. It seemed logical to Brinkmann for the task force to stay together. Shortly after 18 00 hours, as the two ships entered a fog bank, Brinkmann was surprised to see the Bismarck's signal light frantically winking at him to execute the parting of company. Immediately the battleship turned to starboard and faded into the mist. A few minutes later he heard the sound of Bismarck's heavy guns. Sometime later he and the others on Prinz

Eugen's bridge caught one last glimpse of their ‘big brother’ far off to the northwest, flashing fire and smoke from her guns. Then she disappeared into a rain squall. Lütjens' sudden manoeuvre temporarily caught the British ships off guard (the Suffolk had briefly turned off her radar to rest it), but by the time the German battleship loomed out of the mist at a range of ten miles, the Suffolk was ready. In the ensuing long-range battle, many salvoes were fired by the British, fewer by the Germans, but no hits were registered.

During the action two of Prince of Wales' 14-inch guns jammed further proof that the ship was not ready for action. The Bismarck resumed her course to the south and the chase went on, but with a crucial difference. Admiral Wake Walker decided to keep his forces together in case of another attack. (At this point he didn't realize Prinz Eugen had broken away, and his radar crew would continue for many hours to report two ships on their screens.) He ordered all three of his ships to take up a position in a line on the Bismarck's port quarter (astern and to port). Suffolk and her priceless radar set took the lead, Prince of Wales the middle, and Norfolk, the rear. This concentration of force may have been sound battle tactics, but it was flawed for the primary purpose at hand - maintaining contact with the Bismarck. The best way to do that was to keep his ships spread out to cover both quarters astern of the Bismarck, so that a turn in either direction would quickly be spotted.

Matters deteriorated further when warnings of U-boats in the area forced the shadowers to adopt a zigzag course. Since the Bismarck continued on a straight line south, this meant that on each port (southeast) leg of the zigzag, the Suffolk passed out of radar range, only regaining the Bismarck on the way back to starboard. For the time being, however, this tactic worked well, and the Suffolk's radar operators became used to losing their target for roughly fifteen minutes during each complete zigzag.

Admiral Lütjens broke into a rare smile as Lindemann and the other officers on the bridge congratulated him. The breakaway of the Prinz Eugen had worked flawlessly, proving yet again his mastery of sea tactics. But the smile was soon gone as his chief engineer arrived with his final damage report. The fuel situation remained critical. There seemed no prospect of getting access to the thousand tons of fuel trapped in the bow. Lütjens now knew that any thought of leading his pursuers into the hornets' nest of German U-boats stationed south of Greenland had to be abandoned. His only option was to head directly for France, at the most economical speed. Just before 21 00 hours, he radioed Group West and informed them of his amended plan. He ordered Lehmann to reduce speed to 21 knots. At 22 00 hours, the aircraft carrier

Victorious was still 120 miles away from the Bismarck, darkness was coming on, and the weather was deteriorating. Time was running out for Victorious' aircraft. But he had his orders. And so did the flight crews who were even now clambering into the nine flimsy Swordfish biplanes that were lashed to the heaving flight deck. Those who had only flown from land before looked at the tiny runway that rose and fell, and wondered whether they would manage to take off at all, let alone find their quarry. Landing was an almost unthinkable prospect for these novice aviators.

An hour and a half later eight aircraft (one had got temporarily lost) were homing in on their target. But the heavy cloud cover was proving a problem; it caused them to lose their bearings until the Norfolk set them back on the correct course. Finally, the primitive radar on the squadron leader's aircraft again picked up a ship. Without hesitating, its pilot, Lieutenant-Commander Eugene Esmonde, led the charge down through the clouds only to discover that they had picked the wrong target. This was the United States Coast Guard Cutter Modoc, which had strayed into the area while searching for survivors from a convoy recently attacked by U-boats. Esmonde realized the Modoc was not the Bismarck when distant guns started firing. He banked his aircraft sharply toward the German battleship still several miles away. Two planes followed suit, then climbed with him to about 2 000 feet. None of the flak bursting around touched them, and it looked harmless enough, leaving nothing more than dark puffs of cloud through which they flew. Now they had the Bismarck in their sights and decided to come in at the port bow. Swooping down until he was barely missing the twenty-foot wave tops, Esmonde led his planes in.

The Germans were throwing everything at him, even their heavy guns were firing. As the big shells splashed, they threw up huge waterspouts in his path, any one of which would have knocked his plane out of the air. Then, as they approached critical distance, he decided he wasn't satisfied with their position and signalled to swing around and try again. Courageously he led his tiny force back into the unremitting barrage. This time they released their torpedoes at 1 000 yards, only to see the Bismarck turn in time to avoid a hit. As he flew away, dodging flak and waterspouts, Esmonde's observer insisted that he increase altitude so he could take a photograph. As he was doing so one of the splashes got them, literally lifting the aircraft up in the air and ripping out its bottom. Somehow Esmonde flew on.

On Bismarck, damage control reported to the bridge: the ship was unharmed, except for a torpedo, running shallow that had only struck at the armor belt, just below the waterline, pushing the armor in an inch or so. As the Swordfish lumbered off into the growing darkness, the Bismarck quickly returned to normal. Men relaxed at their stations, smoked cigarettes, and boasted about their marksmanship. No one really knew for sure how many enemy planes had attacked them, and the number grew with each telling. No one had actually seen a plane crash, but before long the story went that the enemy had lost numbers exceeding the entire attacking force. All laughter ceased, however, when they heard that a crew member who had been handling ammunition on the deck above where the torpedo had hit, had been thrown against the ship structure and killed instantly. Six other men, all stationed below, had broken bones. With the departure of Prinz Eugen they were now completely alone in enemy territory. English ships were close at hand. Their position was known. With the return of daylight more attacks would inevitably come, whether from planes or ships or both, they could not know. While the Bismarck settled in for the short night, the adventure was far from over.

The crew of the Victorious were amazed that no planes had been lost, but several had been damaged. But this was a minor problem compared to that of finding their carrier, whose homing beacon had stopped working. The fliers were getting desperate before Esmonde caught sight of a red signal lamp aboard the Galatea. Three pilots had never made a night landing at sea. If they missed with the first try, they would likely have no fuel for a second. One by one they landed safely. Victorious' five Fulmar fighters had been sent out some time after the Swordfish took off. Their mission, in Admiral Tovey's words, was "to shadow and to distract the enemy". Of these only two actually found the Bismarck and only three returned safely to the Victorious. Tovey later wrote, "The crews were inexperienced, some of the observers finding themselves in a two-seater aircraft for the first time, with wireless set tuned only on deck and no homing beacon. Night shadowing is a task which tries the most experienced of crews and it is not surprising in these difficult conditions that they failed to achieve it". The two missing planes went down in the sea, but the crew of one of them was ultimately rescued by a passing merchant ship.

Although the torpedo had done little direct damage, the shock from its detonation, combined with the Bismarck's high-speed evasive action during the attack and the jarring constant firing from all the guns had reopened her earlier wounds. The collision mats protecting the shell holes forward had come loose, and water was again pouring in, causing the bow to go down farther.

The packing in the damaged bulkheads was loosened, leading to the complete flooding of the forward port boiler room, which had to be abandoned. There was now a danger of seawater getting into the boiler feed water and shutting down the whole system. Lütjens ordered the speed slowed to 16 knots while the mats were repaired. The engineering crews worked feverishly to ensure a supply of fresh water to the boilers. The admiral must have wondered how much more his ship could take. He simply had to slip his shadow before morning.

In the early hours of 25th May, the British forces were beginning to close in. Revenge, London and Edinburgh were still too far away, but Victorious was ready to launch another air attack at dawn. And Admiral Tovey's battle fleet, King George V and Repulse, was steaming westward at full throttle. If the Bismarck maintained her current course and speed, he would make contact around 08 30 hours, shortly after sunrise. Rodney, with three destroyers, was now roughly 350 miles southeast and would intercept at about 10 00 hours. Ramillies, steaming from the south, was due to arrive around 11 00 hours.

A new surprise was in store for the Bismarck. This was Force H, under Vice Admiral Sir James Somerville, already in the Bay of Biscay. At 15 30 hours, the order went out for Somerville to make a course at full speed to intercept the Bismarck. At this juncture it still seemed highly unlikely that Force H, consisting of the old battle cruiser Renown flying Somerville's flag, the aircraft carrier Ark Royal and the cruiser Sheffield, with their attendant destroyers, would have any role in the unfolding drama. It was more than 1 000 miles to the southeast. But the fates had put Somerville in difficult circumstances before and shown him to be a professional sailor of iron determination.

May 25th was Admiral Lütjens' fifty-second birthday, and he was about to give himself the best possible present. It had not escaped his notice that all three British ships were remaining in formation on his port quarter, as if inviting him to attempt a getaway to starboard. He was also aware that his shadowers were maintaining a zigzag course that took them well away on the port leg. So he waited until the opportune moment, and then shortly after 03 00 hours, ordered his helmsman to turn hard over to starboard. He timed it perfectly. Although he didn't know it, Suffolk's radar signals were still being picked up by the Germans, and the Bismarck had just disappeared from the Suffolk's radar screens. Once he'd opened up the distance, Lütjens began a wide loop north and then east that took him across the wakes of his pursuers and left him on a direct southeast course for France. He doubted the stratagem had succeeded, but it had been worth a try.

The exhausted radar operators on Suffolk were not particularly surprised when they failed to make contact with Bismarck as expected at 03 30 hours, after the latest southeast leg of their zigzag. Obviously the Germans had altered course slightly to the west. They would find them soon enough, as they had on countless other occasions. (They still believed the two German ships were together). But, the minutes ticked by and still there was no blip on the radar screen, even though they headed farther and farther southwest. Finally, at 05 00 hours, Captain Ellis reluctantly signalled Admiral Wake Walker: "Have lost contact with enemy."

Admiral Tovey was not amused. In the plotting room aboard King George V, he and his officers stared glumly at the chart on which were marked the approximate positions of all the ships that had joined in the chase. To maintain maximum secrecy from the Germans, British ships rarely broadcast their positions, so Tovey had only a general idea where his forces were. (For example, Victorious was actually 200 miles south of where he thought she was.) But until now he had always known exactly where the Bismarck was. Now she had vanished into thin sea air. Which way had she gone? Various theories were suggested as to Lütjens' intentions. Tovey listened, but for once said nothing to lighten the mood. This was no time for jokes. As commander in chief of the Home Fleet, he bore the ultimate responsibility. It fell to him to decide how to deploy his inadequate forces. Back on shore, First Sea Lord Dudley Pound and Winston Churchill were second-guessing his every move. Tovey knew he would have to face Churchill's wrath and would probably lose his job if he allowed the Bismarck to slip through his grasp.

Since Tovey did not know how seriously the Bismarck was damaged, he had to consider the possibility that she would rendezvous with a tanker, then go after merchant shipping. If a tanker was her goal, her most likely course was either northwest to the Davis Strait (a good hiding place for an oiler) or south into the mid-Atlantic where a German fuel ship was suspected to be operating. If, as he thought most likely, a safe port was Lütjens' goal, he might now be steering northeast toward the Iceland Faroes gap or southeast for Brest, Gibraltar or even Dakar. But he did not have sufficient forces in the area to cover 360 degrees on the compass. He concluded that he must move to forestall the most damaging possibility - a refuelled Bismarck loose in the Atlantic shipping lanes.

The Norfolk and Suffolk under Admiral Wake-Walker were already searching to the southwest (Prince of Wales was detached and ordered to join up with King George V. Later, running low on fuel, she was sent back to Iceland.) Reluctantly, Tovey now ordered Victorious and the accompanying cruisers to cover the route to the northwest. He had no way of knowing that this

meant the few precious planes he possessed would be searching in exactly the opposite direction from the way the Bismarck was now heading. Other units were ordered to take up the patrols of the Denmark Strait and the Iceland Faroes Gap. The route to France - the least damaging possibility - was left unsearched. Only Force H, steaming up from Gibraltar, and Rodney, much closer but still well to the south, were in position to intercept the Germans if they were heading in that direction - and were rediscovered in time. As the sun rose on the morning of 25th May, the British were everywhere the Bismarck wasn't.

While the British were in a fuddle, Admiral Lütjens, heading southeast for France at a speed of 20 knots, believed he was being followed. He simply couldn't believe he'd eluded the British radar and chose to ignore the positive evidence. Possibly Lütjens' grip on his command was already slipping. Whatever the reasons, he made what appears in retrospect to be a very careless mistake: he broke radio silence. Even after 08 45 hours, when Group West radioed him that the British seemed to have lost contact, he sent off two further radio messages. For the time being, however, Lütjens' birthday luck held. The British did get bearings from the Bismarck's radio transmissions, but Admiral Tovey's navigator misinterpreted them. The bearings clearly showed the Bismarck to be southeast of her last reported position - suggesting strongly that she was indeed heading for France. However, instead of sending Admiral Tovey the new position they had worked out, the Admiralty relayed only the bearings. Apparently Tovey wanted to do the calculations himself, since this would allow him to factor in any additional bearings from his own destroyers equipped with radio signal direction finders (DIF), and so get a more precise fix. Unfortunately and inexcusably, on board King George V the bearings were miscalculated, yielding a position ninety miles north of where the Bismarck was. This convinced Tovey the Bismarck had turned north and was aiming for Norway through the Iceland-Faroes gap. He altered course to the northeast. By mid-day, the closest British forces were racing away from the Germans.

Lütjens broadcast to the crew: "Seamen of the battleship Bismarck! You have covered yourselves with glory! The sinking of the battle-cruiser Hood has not only military, but also psychological value, for she was the pride of England. Henceforth, the enemy will try to concentrate his forces and bring them into action against us. I therefore released Prinz Eugen at noon yesterday so that she could conduct commerce warfare on her own. She has managed to evade the enemy. We, on the other hand, because of the hits we have received, have been ordered to proceed to a French port. On our way there, the enemy will gather and give us battle.

The German people are with you, and we will fight until our gun barrels glow red-hot and the last shell has left the barrels. For us seamen, the question now is “victory or death”!

By the time Admiral Tovey realized the error in his calculations and turned his ship southeast toward Brest, the Bismarck had opened up a 150-mile lead. Most of the forces at his immediate disposal were running so short of fuel that they had to be ordered into port, leaving him virtually alone to continue the chase. Prince of Wales, Victorious, Repulse and Suffolk all left the field. Ramillies, which would now never catch up, was dispatched to take over the escort of the Britannic. That left him with Rodney, which had never deviated from its northeast course to bring it between Bismarck and Brest. He could also count on Norfolk - for now Admiral Wake-Walker's fuel was also low, but he could not bear the thought of abandoning the chase after he had let the Bismarck slip away when interception seemed certain. He, too, turned southeast toward France.

On 25th May, it looked to everyone, except perhaps Admiral Lütjens, as if the Germans were going to make it. They continued to elude contact; Admiral Tovey couldn't catch up, and in another day would himself be perilously short of fuel. Force H continued to steam northward; at 21 00 hours, Rodney, which had been sailing northeast all day, altered course to the east to intersect the Bismarck's probable course. Both Force H and the Rodney would be in range if the Bismarck could be found. Now, almost in desperation, the Admiralty ordered six destroyers, on escort duty under the command of Captain Philip Vian (of Norway fame) to join them. Rodney still had three destroyers in company, but these were getting low on fuel, and King George V was sailing unescorted into U-boat waters. The British were throwing every ship at their disposal into the Bismarck chase.

At 03 30 hours on Monday 26th May, a Catalina flying boat took off from Lough Erne in Northern Ireland, and with it one of the least likely heroes in the Bismarck saga. He was twenty six year old Ensign Leonard B. "Tuck" Smith of the United States Navy, one of a contingent of navy pilots sent over to help the British to fly their Lend-Lease Catalina’s and to gain wartime experience. Flying Officer Dennis Briggs steered the plane west toward where the Bismarck was believed to be. Around dawn, there was finally enough light to see where you were going. A strong wind whipped the sea below into whitecaps.

Neither Commanding Officer Briggs nor co-pilot Smith really expected to spot the Bismarck. What were the chances of finding one ship in the middle of this empty vastness? One minute

they could see the water, the next it was obscured. At 10 30 hours, a dark shape appeared in the mist ahead of them. Could it be the Bismarck? There were no destroyers in sight as you would expect if the ship were British. Briggs headed aft to the wireless operator's table and began to write out a signal. Smith took the Catalina up into the clouds, then circled to come in closer. But he misjudged and broke out of the clouds right above her, to be greeted by all guns firing. Black puffs of smoke surrounded them, and they could hear bits of shrapnel hitting the plane's hull.

Briggs finished scribbling out the coded message for the wireless operator. When the Bismarck's actual position, roughly 700 miles from Brest was broadcast to the British fleet (a signal also picked up and decoded by the Germans), Admiral Tovey discovered just how close his ships had come to running right into her. Captain Vian's destroyers had passed only 30 miles astern. Rodney had missed by 50 miles. Now both Rodney, 125 miles to the northeast, and King George V, 135 miles to the north, were too far away to catch up. Only Force H, which was 100 miles away and stood between the Bismarck and Brest, was in a position to slow her down. But Tovey dared not send Force H's Renown and Sheffield against the Bismarck. In a shootout, the cruiser and the venerable battle cruiser would be no match for the Germans' superior firepower and protective armour. Renown was older than the Hood, and was even more lightly armed and armoured.

It was up to Ark Royal, now roughly 50 miles away from the Bismarck and on a parallel course, to deliver the blow. That meant he must rely once again on Swordfish biplanes. At least, Tovey reflected, these pilots were among the most seasoned flyers. If the Bismarck could be slowed, he and Rodney, which had joined him early in the afternoon, could move in for the kill. Around 16 00 hours, Tovey received the news that fifteen Swordfish had left the Ark Royal armed with torpedoes. The odds now were impossibly long.

Fifteen Swordfish flew in formation for the Bismarck, found a ship on radar, dived and attacked. Only a few of the pilots wondered why the ship failed to return fire or noticed that their target had two funnels, a feature no German warship possessed. Only three recognized the Sheffield and held onto their torpedoes. Many of the pilots only discovered their mistake when they returned to their carrier, they had attacked one of their own. With relief it was pointed out that no damage had been done. Many of the torpedoes, armed with magnetic firing pistols, had exploded on contact with the water. The captain of the Sheffield had managed to evade the others. Somerville ordered another attack to be launched as soon as possible. But with the

steadily deteriorating weather, this would take several hours. At least one useful lesson had been learned: the faulty magnetic firing pistols were replaced with the old, reliable contact firing variety.

All fifteen Swordfish managed to launch their torpedoes, get away and return to the Ark Royal, but not without damage. Three planes crashed on landing and were completely wrecked. Many had been hit by flak, but only two crew members were wounded. One of the planes was responsible for delivering the mortal hit in the starboard quarter that disabled the Bismarck's steering mechanism and jammed the rudders. The only other hit, struck just outside the port engine room and slightly below the edge of the armor belt (one of the most heavily-armoured parts of the hull), causing minor structural damage and some flooding. Admiral Tovey was sceptical. He had just received a report from the Sheffield: ‘Enemy steering 340 degrees, if true, this meant the Bismarck had reversed course and was sailing back toward her pursuers. Tovey had already resigned himself to the Bismarck's escape and Churchill's ire. Impatiently he dismissed this latest report. Either the Germans were still manoeuvring to avoid the torpedo bombers, or the Sheffield had been fooled. But confirming reports soon followed. Something was seriously wrong with the German battleship. She had slowed down and seemed to be travelling in a big, slow circle.

Tovey had informed the Admiralty that his fuel situation would force him to turn back at midnight if the Bismarck was not slowed down. A message was received from the commander in chief, First Sea Lord Sir Dudley Pound; "The Bismarck must be sunk at all costs, and if to do this it is necessary for King George V to remain on the scene she must do so, even if it subsequently means towing the KGV”. That would have made the admiral's flagship an easy target for enemy subs. This extraordinary order, not only putting at unnecessary risk the most powerful new battleship in the whole British fleet, but impugning Tovey's courage and resolve as well. Tovey knew that with the Bismarck crippled, King George V and Rodney could be in a position to attack in a few hours. Captain Vian and his destroyers were already on the scene. Force H was poised to offer air and sea support. Tovey had the Bismarck in his grasp. He gave orders for the destroyers to keep track of the wounded ship but to make no foolish attacks. He would wait until dawn, when he could approach the German ship from the northwest with the wind behind him and the light outlining the enemy for his gunners. Then he would make his final move.

Aboard the Bismarck, Captain Lindemann listened calmly to the damage control report. The British torpedo had blasted a hole near the stern below the steering gear rooms, flooding these

compartments and jamming the rudder mechanism. Lindemann believed that all was not lost. With luck, the locked rudders could be freed. If not, it might be possible to steer the ship using only the propellers, which had not been damaged.

But Admiral Lütjens quickly accepted the worst. As Lindemann and his engineering officers discussed ways to restore the ship's manoeuvrability, Lütjens composed a gallant farewell message for the German people: "Ship unmanoeuvrable. We fight to the last shell. Long live the Fűhrer". Half an hour after the torpedo hit, but long before the full ramifications of the damage could be known, he gave this note to the radio room for transmission. As usual, the admiral was putting the worst possible construction on the evidence before all the facts were in.

The damage control crew's first order of business was to shore up the bulkhead above the steering compartments and pump the water out of the port engine room. This could not be done because the start mechanism for the pump failed. Sending men into the breached steering compartments was out of the question: water was violently surging in and out, and anyone would have been killed in an attempt to reach the damaged steering mechanism. And when two seamen opened the hatch to the upper platform deck to try to disconnect the rudder from above, they were met by a violent geyser of water.

Now more desperate solutions were proposed: put divers over the side; try to blow the rudders off with explosives; rig a hangar door as a temporary rudder that would offset the permanent rudders' jammed position. But all these schemes were ultimately rejected. The sea was far too rough. Lindemann would have to steer as best he could using only the propellers, something that had proved near impossible during sea trials. As darkness closed in, the weather worsened. The ship slowed to a speed of 7 knots on an erratic course. For once Admiral Lütjens' pessimism was entirely justified. All Lindemann could do now was wait for morning.

Around 11 00 hours, as the Bismarck limped through the waves, Captain Vian and his flotilla of five destroyers made contact. Vian's orders were to keep track of the Germans until daylight, when the two big battleships would move in. But he was an aggressive officer, not satisfied merely to stand sentinel. Perhaps he could sink the Bismarck himself. He later sent this message to his commander-in-chief explaining how he had construed his duty: "Firstly, to deliver to you at all costs the enemy, at the time you wished. Secondly, to try to sink or stop the enemy with torpedoes in the night if I thought the attack should not involve destroyers in heavy losses".

Given the worsening weather, Vian's 'duty' was easier to enunciate than to execute. Destroyers are much smaller than battleships, much less stable in heavy seas, in this case waves fifty feet high and growing.

Vian's four Tribal class destroyers, would heel so far over it seemed as though they were sure to capsize. It was even worse aboard the fifth member of the flotilla, the slightly smaller destroyer Piorun. But despite the adverse circumstances, Vian managed to get his five ships into a net around the Bismarck, and he ordered a synchronized torpedo attack.

This initial attack only succeeded in proving once again the accuracy of Bismarck's gunnery control. At first the brilliant flashes of the German guns that lit up the black night seemed harmless. But as the destroyers attempted to close in, blazing away with their pitifully small guns, the enemy's shell splashes landed all around. They were driven off without managing to launch a single torpedo. Around midnight all of the destroyers had lost touch with the Bismarck, and the combination of complete darkness and filthy weather convinced Vian that a coordinated attack was no longer possible. So he ordered his captains to fire as opportunity arose.

Admiral Tovey aboard King George V, still to the northeast of the Bismarck, ordered star shells to be fired. These illuminated not only the Bismarck but the positions of the destroyers, a great help to the Bismarck's gunners. Again the destroyers were forced to retreat. At 03 35 hours, Captain Vian aboard Cossack moved in to a range of about two miles, launched his last torpedo and withdrew. By 04 00 hours, no British ship was in sight of the Bismarck. To the exhausted crew of the Bismarck, this night battle served at least one useful purpose: it kept their minds off what lay ahead. But in the hours after midnight, as action became more sporadic, the men of the great battleship had time to consider their probable fates. Reassuring messages from Group West were broadcast over the ship's loudspeakers. Submarines were on their way; eighty one bombers would take off from France at first light. The men clung to these crumbs of encouragement and told each other that Germany would not abandon them, but in their hearts, they doubted. These doubts were not helped when they received the Fűhrer's coldly formal message: "All Germany is with you. What can be done, will be done. Your performance of duty will strengthen our people in the struggle for its destiny"!

As day broke over the angry Atlantic, Admiral Tovey and his anxious subordinates, feared the Bismarck would repair the damage and slip through their grasp yet again. But Vian's destroyers had done their job; Tovey knew where the Bismarck was. Unlike Admiral Holland, he would let

his two attacking ships manoeuvre independently. He would not let the Bismarck do to him what she had done to the Hood. Tovey's plan was simple, yet sound. King George V and Rodney would approach from the west with the wind at their backs, into the faces of the Germans. The Bismarck would be backlit in the early morning light, making her an easier target for his range finders.

Tovey hoped, as he later wrote, that “the sight of two battleships steering straight for the Bismarck would shake the nerves of the range-takers and control officers, who had already had four anxious days and nights”! If needed, he had Ark Royal's torpedo bombers close at hand (the sea and weather conditions had prevented Admiral Somerville from sending them off, as planned, at dawn). Norfolk would arrive at any minute from the north, and Dorsetshire, charging up from the south, would now appear in time for the battle.

At 07 37 hours, the Bismarck was twenty-one miles east-southeast of the two battleships, as they altered course and headed directly toward the Germans. At 07 53 hours, Norfolk, which was much closer to the enemy, sighted the Bismarck, but mistook her for Rodney. Admiral Wake-Walker only realized his mistake when the battleship did not return his visual signal. Expecting to be under German fire immediately, the Norfolk retreated to a safe distance to the northwest but kept in visual contact. Thus Wake-Walker, who had let the Bismarck slip away in the mid-Atlantic, found himself again shadowing the German ship. It was some measure of vindication.

Meanwhile the two British battleships continued their approach from the west, sighting Norfolk at 08 20 hours their first visual link with the Bismarck. Wake-Walker signalled that the German ship was sixteen miles southeast of Tovey's position. King George V and Rodney altered course accordingly. At 08 43 hours, Tovey and the others finally saw the sight they had been longing for and dreading during these recent endless days and nights. The two British battleships charged the wounded German titan, coming in on the port bow as the Bismarck struggled to turn to starboard so she could deliver a full broadside. It was Rodney, the old lady of the three, who should have been in the refit docks and not in the midst of a historic battle, who fired first, at 08 47 hours.

The first salvo from her 16-inch guns shook her from stem to stern; to many on board it seemed as though her aging hull plates would separate. But she furrowed forward as her gun crews busily prepared to fire again. Then the flagship, King George V, fired her first round. Still there

was no response from the Bismarck. Then orange flashes could be seen from the Bismarck's two forward turrets, and on the bridges of both Rodney and King George V those in command held their breaths, waited to see where the shots would fall. They fell 1 000 yards short of the Rodney. Clearly the Bismarck's first gunnery officer, was directing his fire at the older, weaker ship - hoping for a repeat of his success with the Hood.

The British continued to close the range as salvo answered salvo and the Germans held their own. Norfolk joined in, firing her 8-inch guns from ten miles away and to the east of Tovey. Bismarck's third salvo straddled Rodney, but only shell splinters hit the ship, damaging the antiaircraft director but causing no casualties. A few minutes after 09 00 hours, the Dorsetshire arrived on the scene, galloping up from the south. Since leaving his convoy, Captain Martin had steamed non-stop for nearly six hundred miles. Now he ordered his 8-inch guns to begin firing, but the range was so great there was little chance of hitting the target. The Bismarck was now beset by four ships. The odds against the Germans, whose locked rudder prevented any manoeuvring, were well-nigh impossible. Nonetheless, had the Bismarck made an early hit as she had in the battle with the Hood, the day might have gone very differently. But even had she won this battle, other ships would inevitably have arrived to finish her.

The first real blood was drawn by the British. At 08 59 hours, with the battle only twelve minutes old, a 16 inch shell from Rodney exploded near Anton and Bruno turrets, knocking them both out of action. Almost at the same instant an 8 inch shell from Norfolk destroyed the foretop fire control director. In one of war's endless ironies, it was a hit as fortunate as the one that had done in the mighty Hood three days before. The battle had barely begun, but already the Bismarck was fighting with one eye blind and one hand broken. As the Bismarck's course continued to seesaw between north, northeast and northwest, the young German gunnery officer now in control of the Bismarck's fate ordered one salvo, then another, then another. His third straddled King George V, his fourth was long. All the while his eyes were glued to the port director as he rattled off instructions to the aft computer room, which relayed corrections to the turrets. Just after the fourth salvo, the director was shattered. The Bismarck was now completely blind. There was nothing to do but let turrets Caesar and Dora fire independently.

It was roughly 09 15 hours, and the battle was not quite half an hour old. By this time the Rodney and King George V were close enough to bring their secondary armament to bear. They had already scored numerous hits on the German ship, but Tovey was unsure just how much damage he had done. And so the death-dealing hail of fire continued.

Bismarck was on fire in several places and virtually out of control. Only one of her turrets remained in action and the fire of this and her secondary armament was wild and erratic. Deep inside the Bismarck, where the crews in the boiler rooms and engine rooms were fighting their last battle with steam and turbines, it was impossible to distinguish between the thud of the Bismarck's guns and the explosion of British shells hitting the ship. However, whenever a salvo straddled, water poured in through the air intakes, so they could guess that the enemy was frequently hitting the mark. In other below-decks positions, the infirmaries, the magazines, the galleys, the men only knew what their officers told them. Each battle station was isolated from the next one, and their only contact with other parts of the ship was by telephone. As communication broke down, this isolation increased. But still the men toiled on or waited for orders that never came. For many in the forward part of the ship where damage was the greatest, death came swiftly.

Rodney and King George V were now at such close range that their guns were at maximum depression, and the battle was turning into target practice for the British. Shell after shell slammed into the Bismarck. Soon the forward part of the ship was an almost total wreck, with gun barrels pointing crazily skyward or drooping ‘like dead flowers’, according to one observer. At 09 21 hours, a heavy calibre shell hit turret Caesar. Although the men inside were unharmed, their starboard gun would no longer elevate. At 09 27 hours, one of the forward turrets managed to fire a last salvo. Then the left barrel of turret Dora burst, whether from a shell hit or internal explosion is not known, shredding like a peeled banana. At 09 31 hours, the Bismarck fired her last salvo; then her great guns were silent. But still the British poured their fire into the stricken battleship. Tovey's orders were to sink the Bismarck, to gain full revenge for the sinking of the Hood, even if it meant using every ounce of ammunition. The expenditure was enormous. In all, 2 876 shells were fired at the Germans, 719 from the big guns alone. Perhaps as many as 400 struck the ship. But because the range was so close, the trajectory so flat (many bounced off the water before hitting), they did little damage below the waterline.

The Bismarck was a blazing wreck, but still she would not sink. The firing continued, even though the Bismarck was now a battered hulk with fires burning in many places. Her bow plates rose and fell so sharply that they sent up great blasts of spray. Then the impersonal steel leviathan that had haunted the British for the past week acquired a human dimension. A little steady trickle of men, jumped into the sea, one after the other.

Around 10 15 hours, Tovey ordered the firing to cease and withdrew with Rodney following. The battle had lasted almost an hour and a half. Shells were still hitting the Bismarck when the order to scuttle and prepare to abandon ship was issued. The crew knew that the ship was a disaster area with many fires raging. They were ordered to ignite the fuses to the scuttling charges that would blow open the sea-cocks in the boiler room and the cooling water inlets to the condensers, causing water to flow rapidly into the boiler and engine rooms. The admiral's enclosed bridge appeared to be undamaged, its windows still in one piece. But there was no sign of Lütjens or his entourage. Then the British firing ceased. Silently, men made their way aft through the no-man's land of destruction and death toward where the survivors of the Bismarck's final battle had gathered as the ship heeled ever more sharply to port and began to sink by the stern. One of the last shells to hit the Bismarck penetrated to the battery deck, just aft of the funnel, where a few hundred men had gathered and were surging forward toward the companionway to the open deck above.

Several hundred men were gathered between the two after turrets. The smart ones slid down the starboard hull to the keel and jumped from there. Some dived head first and broke their necks. Others who tried to slide down the deck and go in on the port side were washed back against the ship and knocked unconscious. The ship was sinking slowly, and every extra minute on board meant one less in cold water. They were sure that British ships would rescue the survivors. But where were they? Rodney and King George V had sailed away, leaving an apparently empty ocean. The Bismarck's battle standard was still flying from the mainmast. "A salute to our fallen comrades"; called out an officer. The men saluted the flag and then they jumped.

As Rodney and King George V withdrew, Tovey signalled any ship that still had torpedoes to close in and finish the Bismarck off. The destroyers had already left the scene, heading home to refuel. That left the Dorsetshire. Now Captain Martin had his chance to win the prize. He moved in to a range of about 1, 5 miles on the Bismarck's starboard beam and launched two torpedoes. One hit right under the bridge area. Then he moved around to the other side and launched a third. It, too, found its mark. A few minutes later, the Bismarck's stern sank under the waves, her jaunty, flared bow pointed briefly into the air, and then disappeared.

The Dorsetshire's crew watched her go down, found it a most unpleasant sight, and thought how such things turned one against war in general. They were close enough to see the men jumping overboard and swimming in the water. To Admiral Tovey, who watched through field

glasses from farther away, the Bismarck's final moments seemed nobler: "She put up a most gallant fight against impossible odds, worthy of the old days of the Imperial German Navy. Although the two British battleships had been very lucky, escaping without a hit, both were considerably the worse for wear after more than an hour of continuous firing and several near misses from the Bismarck's shells. A number of King George V's heavy guns had become inoperative at various times during the battle, but her secondary armament had picked up the slack as the range closed. The venerable Rodney had fared much worse. The force of the explosion from a shell that landed in the water close by had jammed her port torpedo tube doors. But this was minor compared to the side-effects of the continuous firing of her big guns, several of which actually jumped their cradles. There was damage throughout the ship. The overhead decking ruptured and many bad leaks were caused by bolts and rivets coming loose. All compartments on the main deck had water flooding the decks. Given this evidence, the damage from even one well-placed 15-inch shell would likely have been enormous.

While most of the British ships, which were desperately short of fuel, left the scene, the destroyer Maori and the cruiser Dorsetshire remained to pick up survivors. More than one thousand men now found themselves swimming for their lives. But from what quarter would succour come? Surprisingly, many didn't notice the cold (13 degrees Celsius). Those who did felt it first in their hands and feet. The men had been in the water for an hour when they saw the welcome silhouette of a three-stack cruiser - the Dorsetshire. They began to swim toward salvation as lines were lowered, since it was too rough to launch boats. Soon the sheltered lee side of the British ship was crowded with hundreds of men. It was mayhem. Men fought for the same line while others dangled unattended. The oil made the ropes slippery and the cold cramped their hands, it was almost impossible for most to hold on unless the rope was tied in a bowline so you could get a foot or an arm through the loop. One man whose arms had been blown off, but had somehow made it this far, was trying to grab a line in his teeth. A midshipman climbed over the side in an attempt to get a bowline around him. But the ship began to move forward and he lost him, only barely managing to climb back on board himself.

The destroyer Maori was beginning to pick up survivors when the signal came from the Dorsetshire of a possible U-boat sighting. Both ships were to leave the area immediately. As they got underway, some men clung desperately to lines as long as they could, salvation slipping from their grasp. Only those who were already partway up a rope had a chance. Hundreds of others watched in disbelief as their only hope quickly faded into the distance.

Theirs would be a slow, creeping death. This is how Ludovic Kennedy portrayed the grisly scene: "In Dorsetshire they heard the thin cries of hundreds of Germans who had come within an inch of rescue, had believed that their long ordeal was at last over, cries that the British sailors, no less than survivors already on board, would always remember. From the water the Bismarck's men watched appalled as the cruiser swept past them, believed then the tales they'd heard about the British not caring much about survivors were true after all, presently found themselves alone in the sunshine on the empty, tossing sea. And during the day, as they floated about the Atlantic with only lifebelts between them and eternity, the cold came to their testicles and hands and feet and heads, and one by one they lost consciousness, and one by one they died".

In all, one hundred and ten men, so blackened with oil they looked like coal miners, were pulled from the water: eighty five were on Dorsetshire, twenty five on the Maori, out of a crew of two thousand two hundred and six. They were stripped, wrapped in warm blankets and bundled below. They were given dry clothes and hot sweet tea. The ships' doctors examined them, and those with wounds were attended to.

On the morning of 27th May, Churchill rose in the House of Commons to report on the battle in Crete, which was going badly, and the Bismarck. "This morning, shortly after daylight the Bismarck, virtually at a standstill, far from help, was attacked by the British pursuing battleships. It appears, however, that the Bismarck was not sunk by gunfire, and she will now be dispatched by torpedo. It is thought that this is now proceeding, and it is also thought that there cannot be any lengthy delay in disposing of this vessel. Great as is our loss in the Hood, the Bismarck must be regarded as the most powerful, as she is the newest battleship in the world". Hardly had Churchill resumed his seat when a note was passed to him. He promptly rose again. "Mr Speaker, I crave your indulgence, I have just received news that the Bismarck is sunk".

Adolf Hitler was outraged at the news. This was just what he had feared. He should never have allowed Raeder to send the battleship to sea in the first place. The next day Raeder wrote to Hitler; "Although her loss was indeed a blow to German prestige, she had served an important purpose. Five battleships, 3 battle cruisers, 2 aircraft carriers, 13 cruisers, 33 destroyers and 8 submarines had been engaged in her pursuit and destruction. Such a diversion had unquestionably contributed to the successful conclusion of the invasion of Crete".

But Raeder knew that the German leader would be reluctant to approve any further commerce raiding in the Atlantic. Indeed, for the duration of the war the Germans never mounted an operation on the scale of Exercise Rhine.

CHAPTER SEVEN

PEARL HARBOR

The devastating blow delivered by Imperial Jan at Pearl Harbour on the 7th December 1941 effectively introduced the Americans to 'total war'. Nothing experienced by any nation in both world wars even remotely compared with the catastrophic naval defeat suffered by the United States on that fateful day in world history. Their unsuspecting fleet was caught completely unawares when over 350 aircraft from 6 Japanese carriers decimated the US Pacific Battle Fleet, inflicting the worst military defeat suffered in America's 200-year history, leaving them totally bewildered and completely astonished.

In terms of military achievement and for sheer audacity the raid on Pearl Harbor is without parallel and merits a special place in naval warfare. In a masterful stroke, a Japanese carrier task force steamed undetected across 5 000 kilometres of open sea to launch the greatest combined air/sea operation of all time. Japan's success at Pearl Harbor was made possible due to superb training and remarkable duplicity. As a result she was placed in a position of overwhelming strength throughout the Far East.

In a wave of conquest unmatched in both world wars, several operations were launched simultaneously against British, Dutch and American possessions stretching 10 000 kilometres. One by one the great bastions of white supremacy and white prestige fell before the Japanese onrush. One of the few international statesmen with the vision to realise the consequences of this development was none other than South African Prime Minister Jan Smuts.

Even as the attack on the U.S. Pacific Fleet was taking place at Hawaii, Japanese troops were already landing on the Malay Peninsula and preparing to advance overland to Singapore, later to capitulate after Japan inflicted on the British army the most humiliating defeat in its history. This was accomplished by skilfully executed tactics that almost entirely eliminated their British adversaries as combatants in the Far East.

Pearl Harbor proved to be a fatal blow to western imperialism and facilitated the coup de grace that was administered at Singapore. On the 10th of December, just three days after Pearl Harbour; HMS Prince of Wales and HMS Repulse under the command of an admiral totally disbelieving in air power, also made history by becoming the first capital ships to be sunk from the air in open sea. In an era when the battleship was considered, with unshakable conviction, to be the ultimate maritime weapon, the fate of these two great ships proved once and for all that powerful battleships were not immune to destruction from the air. With great reluctance it was now accepted that naval air power had come of age. Ironically, this was only accepted after every allied battleship in the Far East, ten in all, were either sunk or put out of action.

The story of Pearl Harbor has for too long been over-simplified. The question of why Japan caught the United States napping is exceedingly controversial and one must constantly keep in mind that nothing takes place in a vacuum. The background to this calamitous event goes back to the end of World War One when the US and Japan became increasing aware that war between them was inevitable and both countries planned for such an event. Japan believed the Western Powers were hostile and looked down on them as being an inferior race. Relations

became strained due to US opposition to Japan's imperialism and expansionist policies; thus reducing Japan's dependency on the US for supplies, in order to create a *'Greater East Asian Co-Prosperity Sphere'.*

This political concept was to promote a self-sufficient bloc of Asian nations led by Japan, free of Western colonialism and influence. In reality it was nothing more than a scheme to control countries in which puppet governments would manipulate its economies and peoples for the benefit of Imperial Japan. Without these economic resources and raw materials Japan would never become a dominant power in the region.

Japan's invasion of China in 1937 and the Tripartite Alliance formed in 1940 between Japan and the other two Axis dictatorships, namely Nazi Germany and Fascist Italy, resulted in America applying economic sanctions that included an oil embargo. Tensions continued to escalate when President Roosevelt moved the US Pacific Fleet from California to Hawaii in the hope of discouraging Japanese aggression in Asia. The Commander in Chief Admiral Richardson told Roosevelt this move was not a deterrent but an incitement to Japanese aggression. Roosevelt sacked him.

In July 1941 tensions further intensified when Japan occupied French Indochina, causing the US to impose a total trade ban and freeze Japanese assets. Facing economic collapse and withdrawal from recently acquired territories, Japan could either agree to US demands and restore normal trade practices or use force to gain access to resources. By November 1941, the Japanese though still continuing to negotiate with the United States, had come to the conclusion that further talks towards the lifting of sanctions were futile. Their only alternative was war, or the abandonment of their objectives to dominate the Far East.

On this basis, if there had to be war, then the present time seemed opportunistic for Japan. At this stage the German armies were threatening both Moscow and Egypt. A great part of the United States Navy was engaged in an undeclared war in the Atlantic against the U-Boat menace. Therefore, the Japanese military leaders prepared to exploit this deepening world crisis and seize the mineral rich territories in Asia; which, they considered to be theirs by right and were prepared to challenge the Western powers for possession.

Other factors prevalent in November 1941 were that Great Britain was in such a defensive position that, even if she survived, her entire war-making potential would be exhausted in the desperate defence of her homeland never mind her empire. Potential enemy forces that could

be deployed in the Far East, particularly in the air, were insufficient to prevent the fully trained and mobilised forces of Japan from achieving her goals. Hitler's Germany had neutralised any threat from the Soviet Union, who appeared to be on the verge of collapse. In accordance with this scenario, the Japanese Army was given the primary responsibility for conquering Malaya, the Dutch East Indies, and Burma. Simultaneous attacks would be launched on Java and Sumatra with the intention of isolating Australia and New Zealand. The navy would play a supporting role by embarking on several combined operations. But in doing so, Japanese naval forces would most probably have to contend with the American Pacific fleet anchored at Pearl Harbor.

Admiral Yamamoto the commander of Japan's Combined Fleet proposed a sudden and paralysing knockout on the U.S. fleet at Hawaii. Yamamoto believed if there was to be war with the US, Japan would have no hope of winning unless the US Fleet in Hawaii was destroyed. He calculated that the United States would be so weakened by this proposed attack that she would be unable to mobilise sufficient strength to go over to the offensive for about two years. By that time, the conquered territory would be fortified and Japanese stubborn resistance would undermine American determination to continue the war. The Japanese speculated that the United States, in the face of potentially unacceptable losses would probably compromise, thus allowing Japan to retain a substantial portion of her territorial gains. When one considers what happened years later in Vietnam, perhaps this hopeful speculation was not entirely unfounded.

However, returning to 1941, Yamamoto had been strongly influenced by the successful British Fleet Air Arm operation at Taranto the previous year when three Italian battleships had been put out of action by only twenty-one obsolete Swordfish torpedo planes launched from a single aircraft carrier. Consequently, Yamamoto planned and organised a massive Strike Force consisting of 6 aircraft carriers, 2 battleships, 3 cruisers and 11 destroyers to attack Pearl Harbor in a pre-emptive strike. The Philippines would be seized to deny the US a base for possible retaliation.

On 26th November, the strike force left Japan and proceeded in utmost secrecy on a mission intended to deal a fatal blow to the U.S. Pacific fleet. Just prior to launching their aircraft at dawn on 7th December from a point 350km north of Hawaii, the Japanese received an intelligence report that no American aircraft carriers were at Pearl Harbor. This was a disappointment, but, there were still eight battleships in the harbour anchored in pairs at Battleship Row and these were the primary targets. As previously noted, the battleship at this

time, was still considered to be the principal capital ship and the aircraft carrier, merely a support vessel.

Diplomatic negotiations with the US continued and if successful the ships were to return to base and no one would have been any the wiser. Reports confirmed that no defensive measures were in place indicating complete surprise. An hour before the Japanese air strike on Pearl Harbor, the first action of the Pacific war took place when a US Destroyer sighted, attacked and sunk a Japanese midget submarine outside the harbour entrance. Paradoxically, the first shots fired to launch the Pacific war, came from the United States and not from Japan, and the first casualties were Japanese not American. The Destroyer captain promptly reported this encounter with the Japanese submarine, but unfortunately for the Americans, no one took any interest. If the alarm had been raised it would most certainly have provided sufficient time for Pearl Harbor fighter aircraft to take to the air and enabled American ships to raise steam and make for the open sea.

Ninety six warships, of all shapes and sizes were in harbour. Anti-Aircraft guns were manned but ammunition was locked up and the keys held by officers, some of whom were ashore. Army OC Lt General Walter C. Short had received a signal from Washington stating "*hostile Japanese action at any moment".*

Admiral Kimmel, Commander in Chief, Pacific Fleet, was notified that the Japanese were burning their codes and had changed call signs twice during the month. Of major importance he was also informed that Naval Intelligence were unaware of the location of the Japanese Carriers. Amazingly, Admiral Kimmel had received a dispatch from his military chiefs in Washington on 27th November stating clearly and comprehensively - *"consider this to be a war warning".* This dispatch, delivered 10 days before the Japanese onslaught, informed him that diplomatic efforts had failed and Japan was expected to make an aggressive move within a few days. General Short, was of a similar frame of mind as Kimmel; he did not even remotely contemplate that disaster was about to strike and openly boasted that Pearl Harbor was *"the best defended naval base in the world".*

He had become obsessed and totally preoccupied with preventing acts of sabotage. Therefore, he ordered the aircraft to be close-packed on airfields rather than dispersed and ready for action. Thus, on the morning of 7th December the aircraft for the defence of the Pacific Fleet at Pearl Harbor were huddled together and no ammunition was readily available. American air

strength at Hawaii was about to be completely shattered, and two thirds of the entire American aircraft in the Pacific theatre destroyed.

The military commanders in Hawaii could not even conceive the type of attack that the Japanese would launch. Not at any time did they envisage an air strike aimed at the destruction of the U.S. Pacific Battle Fleet. So, when the attack did come, it was a traumatic shock to them. General Short actually thought this was an air raid intended to soften up the defences prior to the Japanese invasion of Hawaii. Meanwhile the military authorities in Washington expected their men on the spot to take full defensive measures at Pearl Harbor. They anticipated that submarines would be sent out on patrol and the battleships with their protective vessels would be at sea deployed in readiness for war. Antiaircraft defences were expected to be placed on full alert around the clock.

This was not an unreasonable deduction; after all, it is the responsibility of the military commanders on the spot to prepare for the worst possible contingency whether in peace or war. However, the commanders at Hawaii convinced themselves that the Philippines or Malaya would be the prime Japanese targets, not Pearl Harbor. They therefore, took no action in preparation for war. Their view was that Japan would never deliberately initiate war with the United States. The idea was considered too preposterous. For the defenders of Pearl Harbor, events were about to go irretrievably and horribly wrong.

To this day, it is quite inconceivable that Pearl Harbor was not put on the state of high alert that it should have been. The senior military commanders concluded, despite the many warnings, that there was no reason to believe an attack was imminent. Therefore, anti-aircraft guns were unmanned and most ammunition boxes, in accordance with peacetime regulations were kept locked.

December 7th was a Sunday morning and many officers and crewmen were allowed to go ashore despite the war warnings. Taking all of this into consideration it is understandable why the Japanese surprise attack was so complete and how they were to rapidly gain air superiority during the crucial first phase of the strike. The Army Radio Station detected a large number of aircraft 140 miles away to the north heading for Oahu. The operators tried to raise the alarm but as the carriers were at sea and a flight of B-17 s were expected from the US mainland nobody at the Info Centre was interested.

When the attack did start, Japanese Zero fighter planes made low level strafing sweeps, shooting up aircraft as well as ground installations. Thus permitting coordinated attacks on the battleships moored in battleship row by dive bombers, level bombers and torpedo planes. The primary attack led by Commander Fuchida consisted of 184 aircraft and caused the greatest amount of damage in a very short space of time. From endlessly repeated practice runs and the meticulous study of maps and models of Pearl Harbor, every Japanese pilot knew exactly what they had to do and aimed at their targets with cool precision.

Struck by three torpedoes, *Oklahoma* capsized almost immediately; trapping below decks four hundred and fifteen men. One aerial bomb blew up the forward magazine of *Arizona,* while another dropped down the funnel and exploded in the engine room. The ship went down with over one thousand, men out of a crew of one thousand five hundred. A torpedo and two bombs hit the *Nevada*. The Japanese then launched their second carrier strike to complete the work of the first wave.

Numerous aircraft were observed over Ford Island as smoke and debris shot into the air. Japanese aircraft skimmed low over the harbour accompanied by muffled explosions. Within 5 minutes, 4 battleships had been holed or severely damaged below the waterline by torpedoes. Dive bombers smashed the decks, bridges and gun turrets to finish off the job. Within half an hour Battleship Row had been devastated and out of 148 first line aircraft 112 were destroyed. The 1st attack wave withdrew having lost only 9 aircraft. One hundred and seventy one aircraft attacked in a 2nd wave consisting of 36 fighter's and135 bombers to attack smaller warships, airfields and targets of opportunity. This was far less effective than the 1st attack and more aircraft were lost due to the Americans being better prepared.

A 3rd Wave attack which may have devastated what remained of Pearl Harbor was called off by Admiral Nagumo, despite being urged by his staff to go ahead with it. Fuel storage tanks which held more fuel than Japan had in its strategic reserve were still intact. As were dockyard facilities and command control structures. Admiral Nagumo, however, decided to withdraw because he believed the objective, the neutralising of the US Pacific Fleet, had been achieved. Further considerations relating to another attack were the probable disproportional increase in aircraft losses, and the unknown whereabouts of the US Carriers. While this was taking place, a Japanese midget submarine succeeded in penetrating the harbour, passing through the entrance gate that had been carelessly left open. This submarine was sighted firing a torpedo at the *Oklahoma* and was promptly depth charged and sunk.

When the smoke lifted over Pearl Harbor, more than two thousand four hundred Americans were dead and one thousand three hundred more were wounded. Some 230 aircraft had been destroyed or heavily damaged. The Japanese lost just 29 planes and less than one hundred men. Eighteen ships had been hit and Battleship Row was a shambles. The *Arizona* and the *Oklahoma* were a total loss. The *California* and the *West Virginia* were sunk at their moorings. The *Nevada*, the *Maryland,* the *Tennessee,* and the *Pennsylvania* were all heavily damaged.

Once the Japanese aircraft withdrew, General Short prepared for the invasion that he thought was bound to follow*. Now* the alertness and preparedness that could have provided such a hot reception for the Japanese was brought to life after the enemy departed. Nervous sentries opened fire at anything that moved and friendly planes were shot down in the belief this was a renewed aerial assault.

On 8th December President Roosevelt at a Joint Session of Congress delivered his famous "Day of Infamy speech". In less than an hour the US was officially at war with Japan; declaring that a state of war existed between the United States and the Empire of Japan. The President then proceeded to waste little time in sacking Admiral Kimmel and General Short for a gross neglect of duty. The entire blame was laid squarely on their shoulders for ignoring all the warnings and indications of obvious Japanese intentions. Pearl Harbor resulted from a vast combination of interrelated factors. On the one hand, bountiful human errors, false assumptions, and a vast store of intelligence information badly handled. On the other, precise planning, tireless training, fanatical dedication, iron determination and tactical excellence. It was a daring and brilliant naval operation.

The military supremo's on both sides were far off the mark in their evaluation of the military threats posed by each other. Japan gambled on the US agreeing to negotiate when faced with a sudden and massive defeat. The effect was the exact opposite. It united US public opinion to declare war on Japan. A major flaw in Japanese naval strategy was a belief that the ultimate Pacific battle would be fought between battleships in Japanese waters. Failure to attack shore facilities enabled the Pacific Fleet to continue operating from Pearl Harbor. Thus the threat to Japan's Eastern flank still remained. Japan didn't get the 12 month respite she needed to secure her gains and 6 months later the tide of war turned against her at the Battle of Midway

The presence of the US Pacific Fleet in Hawaii failed to deter Japanese aggression and against all expectations resulted in a great tactical victory for Japan. The US believed the Imperial

Japanese Navy was too widely committed and thus unable to attack the Pacific Fleet. This air of invincibility was well and truly shaken to the bone. Loss of her battleships forced the US to use carriers and submarines to take on the Japanese at sea which was to reverse the Japanese advance and lead to her defeat. The battleship, regarded as the most powerful and significant element of naval power was relegated to a support role.

One Japanese Naval Commander summed up the result when he remarked "We won a great tactical victory at Pearl Harbor and thereby lost the war". Embracing so much so suddenly so unexpectedly and so spectacularly; it still seems inexplicable and mysterious.

What has been addressed so far may be considered to be the traditional view of which most historians are familiar. But, in probing a little deeper and analysing other aspects of this world-shattering event, several theories emerge. Considering the explosive force that Japan deployed in her conquest of Southeast Asia, one is stunned by the irresponsible propaganda that was put out in the American press about Japanese military strength.

The West hopelessly underestimated Japan's military capacity and offensive capability. In their ignorance they claimed as a well-established fact that due to a deficiency of vitamin C the Japanese lacked good vision; hence, they would make poor air pilots and their naval personnel would be no match for their Western adversaries, particularly after sunset. What is more, the Americans held the Japanese in utter contempt, viewing them as funny little creatures with buckteeth and horn-rimmed glasses covering slanted eyes. They were viewed as slow brained, inefficient, and incapable. The Americans assured themselves that Japan was virtually bankrupt and exhausted from being bogged down in China. They considered Japan to be 100 years behind the times, and if she engaged in a major conflict, her fragile economy would simply shatter. This is quite amazing, considering that on the eve of Pearl Harbor, more than half of Japan's budgetary expenditure for the year 1941 went on armaments.

The British and American press maintained that the Japanese navy consisted of only 4 small aircraft carriers and 200 aircraft that could not possibly meet the requirements of a modern war. Perhaps, this only goes to prove how successful the Japanese were in concealing their military strength from foreign observers. Nevertheless, these ludicrous assumptions accurately reflect the Western underestimation of Japanese air power and this is best illustrated by the reliance

they placed upon the antiquated Brewster Buffalo fighter plane. The Americans actually thought this aircraft was far superior to anything that the Japanese could put in the air.

It was propagated quite arrogantly, that Japanese planes and Japanese airmen were no match for their British and American counterparts and that Japanese aircraft were poor imitations of outdated allied aircraft. In actual fact, as the Western powers were soon to realise at a terrible cost, the Japanese aircrews were superbly trained for a whole range of offensive and defensive missions. The daring and expertise of first rate experienced airmen contributed immeasurably to Japan's early conquests.

In 1941, the Japanese had the best naval arm in the world and were the pioneers of the large carrier striking force, and by the time of Pearl Harbor, Japanese pilots had undoubtedly attained the world's highest bombing standards and were extremely skilful. They had torpedoes that were of a far superior design and much more effective than the Allied torpedoes. The Allies mistakenly thought the Japanese were incapable of producing anything like the Spitfire or the Messerschmitt. They soon received a monumental shock. The Japanese Zero fighter was scornfully described by an American aviation expert as "nothing more than a light sports plane". While in fact, in the hands of highly trained Japanese carrier pilots, the Zero was a most effective and deadly weapon.

The Zero was faster than any opposing plane of the period, and it could out manoeuvre, out-climb, outrange and packed a heavier punch than opposing aircraft. At the start of the Pacific war, the Zero's quickly gained air control over any battle area. American and British aircraft fell like flies before the agile Zero fighters; especially the Brewster's that literally flew on suicide missions against the Zero's.

Not everything however, went entirely the way of Japan. From a realistic perspective, they also made mistakes. The most notable being the refusal to order a third strike at Pearl Harbor. They could easily have destroyed the repair facilities and, more importantly, the oil storage tanks. This vital target stored four and a half million barrels of oil and escaped undamaged. The Japanese carrier commander later explained that he thought the Americans still had a large number of land based aircraft in operational condition at Hawaii and considered it too risky to remain within their range. Perhaps this was being over cautious, or was it being pragmatic? After all, a successful counter strike by the Americans against the Japanese carriers would have reversed the entire situation. The defenders at Pearl Harbor, although caught napping, had

quickly recovered as had been observed by the much heavier losses incurred during the second strike. Undoubtedly, a third strike would have met with strong opposition and would possibly render Japanese losses disproportionate to any additional damage inflicted.

However, in effect, this was a grave error because the loss of the oil supplies at Pearl Harbor would have hindered American naval operations in the Pacific far more than the damage done to the fleet; considering that a single destroyer steaming at full power uses up its fuel supply in 30 to 40 hours. This gives some idea of the staggering needs of an entire fleet. Also it must be borne in mind that Hawaii produced no oil and every drop had to be transported almost 4 000 km's from the mainland. This accumulated fuel reserve would have taken many months to replace. Without it, the Pacific fleet could not have been able to operate from Pearl Harbor and the surviving warships would have been entirely immobilised and incapacitated. The failure to destroy the fuel tanks and service facilities reflected Japanese preoccupation with tactical rather than logistical targets.

Perhaps it was the very ease of their Pearl Harbor operation that threw the Japanese off-balance. Against all expectations and without as much as even a scratch on any of their ships they possibly lost sight of their primary objective, which was to inflict the maximum amount of damage on Pearl Harbor. They now thought only of the minimum damage to themselves. Furthermore, and this was to prove critical to the outcome of the war, escaping damage from the attack, were the three all-important American aircraft carriers in the Pacific, the *Lexington, the Enterprise* and *the Saratoga*. In failing to seek out and dispatch the American carriers, Japan committed its first and probably its greatest strategical error of the entire Pacific conflict.

Allegations have been made that some members of Roosevelt's administration, including the President himself, had advanced knowledge of the attack but purposely ignored them and deliberately exposed Pearl Harbor to force the US into war. The number of intelligence reports from diverse sources that Pearl Harbor was to be attacked, creates suspicions that this may have been the case. The alternative is dereliction of duty and gross incompetence at a very high level. Did the Americans actually know of the forthcoming attack on Pearl Harbor? Bearing in mind that Washington had managed to 'break' the Japanese diplomatic codes. But before proceeding with this line of thought, the sequence of events leading up to Pearl Harbor and the immediate aftermath needs to be recapped.

Saturday, 6th December - U.S. intelligence intercepts a Japanese coded message instructing their embassy staff to destroy all codebooks and prepare to depart. This information was passed on to President Roosevelt, who commented “This means war”. So, there is little doubt that a Japanese attack was imminent.

Sunday, 7th December - The U.S. War Department sends out an alert but uses a commercial telegraph because radio contact with Hawaii is faulty. The telegraph is not marked urgent and is only delivered 4 hours after the attack had begun. Pearl Harbor radar operators detect Japanese aircraft approaching, but the report is disregarded on the assumption that the incoming aircraft are American. At 07 53 hours still on 7th December, the first Japanese assault wave commences the attack, taking the Americans completely by surprise.

Monday 8th December - The United States and Britain declare war on Japan announcing 7th December, *"a date which will live in infamy".*

Thursday, 11th December - Germany and Italy declare war on the United States. The conflict has become global with the Axis powers; Japan, Germany and Italy, ranged against the allied powers, America, Britain, and Russia.(Japan and Russia had a neutrality agreement until Russia invaded Manchuria in August 1945).

From coast to coast, the Americans initially reeled in traumatic shock after Pearl Harbor. But this subsequently turned to fury. The Japanese attack united one hundred and thirty million Americans in a relentless determination to push the war against all odds to final victory. On the bridge of the U.S. aircraft carrier *Enterprise* as she headed back to Pearl Harbor on 9th December, Rear-Admiral Halsey, at the sight of the wrecks at Ford Island uttered: “Before we’re through with them, the Japanese language will be spoken only in hell”!

When the news of the *‘sneak attack’* was broadcast to the American public, it sent a shockwave across the nation; resulting in a tremendous influx of young volunteers into the U.S armed forces. The attack also united the nation in a cyclone of wrath and effectively ended any isolationist sentiment in the country. December 7th mobilised all American resources and raised a mighty wave of indignation across the United States, which would eventually break on Japan with colossal force. The American people were aroused, as no other event in their history had ever done and a lot of people went absolutely berserk. They went as far as chopping down

Japanese cherry trees and even slaughtered Japanese deer in New York Central Park. To every American the Japanese were the embodiment of the evil enemy, the cowardly stab-in-back aggressors. The wave of American hatred against Japan was staggering.

What did Japan actually achieve by the attack on Pearl Harbor? From a military viewpoint, Yamamoto actually removed an albatross from around the neck of American naval policy; because many American admirals had never accepted the aircraft carrier as a capital ship. They believed that the coming war would he fought in much the same manner as the last, where fleet battles would again consist of gunnery duels between lines of heavy ships. To them, big guns, not aircraft were still the decisive naval weapon.

Pearl Harbor effectively cancelled American line doctrine and facilitated a shake-up of the navy high command. The fleet carriers, of necessity became the major capital ships and forced the Americans to adopt carrier warfare, which in the long run was to give her victory. The battleship was now relegated to secondary duties such as offshore bombardment and convoy protection. The carrier now took over as the major strike weapon. Big gun battleships could now only operate after command of the air was assured. Therefore, Pearl Harbor was to prove much less of a disaster than it first appeared. The old US battleships that were sunk were in any case too slow to stand up to Japan's newer and faster battleships and too slow for the American fleet carriers. The Americans could also take consolation, despite severe losses, that Pearl Harbor's repair facilities were practically untouched and would restore most of the damaged ships to service.

All but the *Arizona* and *Oklahoma* were raised, repaired, and renovated, and these ships would later engage in amphibious operations. Meanwhile, their temporary loss proved to be a bonus for the Americans, as they freed thousands of trained seamen for use in the carriers.

The eventual fate of the major ships involved at Pearl Harbor was as follows:

Pennsylvania had all her repairs completed in a few weeks at Pearl Harbor and was back in action by the 2nd January 1942. She went on to win battle honours and survived the war.

Maryland also had all her repairs completed at Pearl Harbour and was soon back in action. She also went on to win battle honours and survived the war.

Tennessee returned to the United States for extensive repairs and rejoined the fleet in February 1942. Besides winning battle honours she also received a navy unit commendation and survived the war.

Nevada also returned to the United States for extensive repairs and rejoined the fleet in April 1942. She then underwent a thorough overhaul plus modernisation programme and went on to see action in the Normandy landings, Iwo Jima, Okinawa and Japan itself, winning many battle honours and surviving the war.

California also underwent a similar modernisation programme as the Nevada and rejoined the fleet. Besides several battle stars she sank a Japanese battleship later in the Pacific. She also survived the war.

West Virginia was not dissimilar to the *Nevada* and *California* and was present at the surrender of Japan in Tokyo Bay on September 1945.

Oklahoma - great efforts were made to salvage her, but she was finally decommissioned in 1944.

With the exception of the *Arizona* and the *Oklahoma,* all the US. Battleships at Pearl Harbor were eventually repaired and returned to service.

The fate of the Japanese ships is somewhat different. Four of the aircraft carriers were sunk 6 months later at the Battle of Midway. The remaining two carriers and battleships were sunk in 1944 at the Battle of Leyte Gulf. By an ironic twist of fate, nearly all the victims survived to fight again, and all the attackers ended their days at the bottom of the Pacific Ocean; the very same ocean that they sought to dominate.

It now becomes obvious that the Japanese miscalculated and did not think through the strategic problems associated in a war with the United States. Even Yamamoto, the architect of Pearl Harbor, knew that Japan could not win a protracted war and had hoped for a compromise peace with his country's great Pacific rival. But, Yamamoto's Pearl Harbor operation only served to provoke the people of the United States to such fury that nothing short of unconditional surrender would satisfy them. There would be no negotiated peace and 16 months after Pearl

Harbor the Americans had their revenge. Retribution was swift; Yamamoto was ambushed by U S aircraft in the south Pacific and killed

In retrospect, it could be deduced that war between the United States and Japan was inevitable, Pearl Harbor or no Pearl Harbor. Japan was on the march towards what she earnestly believed to be her destiny. The Japanese propagated that they were merely adopting the same policy as the Americans had in the previous century with their 'Monroe Doctrine' (America for the Americans). The Japanese were now saying Asia for the Asians; albeit under Japanese control. If the United States would stand aside, and allow the Japanese to grab the Asian territories, well and good; if not, the United States would have to accept the consequences. It was a catch 22 situation, and the price of peace was to give the Japanese everything they demanded.

In summation the disaster at Pearl Harbor was not due to any conspiracy; it was due to military incompetence. Human shortcomings, not betrayal allowed the Americans to be taken by surprise. The commanders in Hawaii failed to discharge their basic responsibilities on 7th December by not engaging the Japanese with every weapon at their disposal. They were clearly warned of war with Japan and were informed that the entire Pacific region was a danger zone. This evaluation is based on the incredible decisions made by the men on the spot. Admiral Kimmel refused to even consider the possibility of a carrier borne air attack, assuming this to be out of the question. No preparation was made to repel such an attack and Kimmel made an inexplicable error of failing to institute long-range aerial reconnaissance.

It later emerged that he had expected the army to perform this task although he knew it was the navy's responsibility. These planes would most probably have located the enemy battle squadron and enabled the fleet at Pearl Harbor to be alerted to the presence of the Japanese carrier force. The American fighter planes would have been airborne, the ground defences manned and the Pearl Harbor story would have been vastly different. In view of the gravity of the situation and the frequent war warnings that had been issued, this was indeed poor judgment. Kimmel did not even cover the north-western approach to Pearl Harbor, even though frequent war exercises revealed this as the most likely area for an enemy carrier based air attack.

The disaster at Pearl Harbor occurred because its defenders were not alert and they lacked vigilance. They failed to detect an approaching enemy task force within 350 km. off Hawaii.

They failed to challenge Japanese patrol aircraft over Pearl Harbor. They failed to act on the reported presence of an enemy submarine, and they failed to respond to radar sightings of Japanese aircraft. Imagine what would have happened if British radar operators had been so complacent at the Battle of Britain. If they had, perhaps the war would have been over a year sooner and there would have been no need for Pearl Harbor.

Kimmel could only envisage a fleet action similar to the battle of Jutland, and advocated leading his substantially inferior battleship fleet deep into hostile waters to give battle to the enemy. It did not seem to occur to him that by the time he would have reached the combat area, his crewmen, who had never fired a shot in anger and who trained only in the most pleasant of waters, would have been exhausted. Japanese submarines would have whittled the American fleet down to size and he would have to give battle to the Japanese in their own hunting ground and on their terms when he was at his weakest. The Americans would not have been able to recover their ships as at Pearl Harbor and their losses would have been possibly twenty thousand men not three thousand.

Kimmel's policy planning had little basis of reality. No adequate plan of defence was made and months before the attack on Pearl Harbor, he allowed the Hawaiian National Park Service to block the installation of radar stations at vantage points. Perhaps Admiral Kimmel agreed that scenic views were much more important than an efficient radar station at Hawaii. A strange inconsistency arises out of Pearl Harbor. Kimmel and Short were dismissed. But, General Macarthur who also got clobbered in the Philippines, remained free from investigation. Macarthur had the advantage of being fully aware that Pearl Harbor had been attacked and knew that the enemy was coming in his direction. Yet Japanese aircraft also found his planes parked helplessly on the ground and obliterated his air force. The lack of air cover was the main reason for the fall of the Philippines.

Pearl Harbor will be debated as long as naval history is written. Far from being a strategic necessity as the Japanese were later to claim, the surprise attack on the Pacific fleet was in effect a short-term tactical masterpiece but a colossal long-term strategic blunder, and from a political viewpoint an absolute disaster. Never in military history has an operation proved more fatal to the aggressor.

What would have happened if the Japanese had launched a third strike, or had invaded Hawaii and perhaps had even caught the American carriers at Pearl Harbor? This poses one of the

most awesome *'IFS'* of the twentieth century because the entire story of World War Two would have changed. If the Japanese had used Hawaii as a springboard to engage the Americans on their long, virtually indefensible Pacific coastline, the consequences would indeed have been far-reaching.

Finding the Japanese fleet on their west coast and at the gateway of the Panama Canal, it is extremely doubtful if the Americans would have shown much interest in the war in Europe. The entire American war effort would have been geared against the Japanese forces on their doorstep. American public opinion would not have allowed a single GI to sail to Europe. Projecting this scenario forward, there would have been no Normandy landings because Britain could not undertake this alone.

If Germany was to be beaten then it would have been by the Russians and this would have extended the Iron Curtain to Calais. All this may have happened if the Japanese commander had made a different decision at Hawaii!

However in the final analysis, the ignominious American defeat at Pearl Harbour was the ultimate price to pay for being unprepared!

CHAPTER EIGHT

THE CHANNEL DASH

In February 1942, the German battle cruisers Scharnhorst and Gneisenau together with the heavy cruiser Prinz Eugen slipped out of Brest harbour on the French Atlantic coast. Under Hitler's orders they were embarking on a daring attempt to escape to the safety of German home waters. In so doing the Germans would strike a humiliating blow at British air and sea power by impudently sailing their big capital ships in broad daylight through the English Channel right under the very noses of the British admiralty.

This remarkable achievement by the German navy would succeed where the Spanish Armada four centuries previously had failed and it would leave the British people stunned and infuriated. What was the reason for this audacious World War Two operation? Possibly, there were several factors which influenced Hitler to order the German fleet home. One reason was his concern

about the intensification of British air raids on Brest Harbour. In 8 months the RAF had dropped 4 000 tons of bombs and it was becoming increasingly difficult to protect the ships from this aerial bombardment. There were also the numerous British commando raids on the Norwegian coastline that convinced Hitler that Norway was the most vulnerable region of his Atlantic Wall.

However, possibly the main reason was that he was particularly concerned about the effect the British arctic convoys were having on his war against Russia. These convoys were shipping crucial war supplies around the Norwegian coast to his Soviet enemy on the Eastern Front. The impatient Hitler was no longer prepared to tolerate three great ships bottled up in Brest; especially when the German Navy was at this time fighting a war on three fronts; namely, the Atlantic, the Mediterranean, and the Arctic. Hitler wanted to concentrate all his surface naval strength in the north, stating that any surface ship that was not in Norway was in the wrong place.

He pressurised his navy chiefs by ordering them to return the capital ships to home waters or they would be decommissioned; and their guns mounted as shore batteries. The Battle of the Atlantic which was now at its height since the Americans had come into the war was to be left to the U-boats alone. This proposal, one should imagine, placed the German navy commanders in a terrible dilemma. On the one hand there was the prospect of the RAF's destructive air power, and on the other the Führer was threatening that unless the ships were brought home he would dismantle them.

The prospect of scrapping the fleet horrified the German navy chiefs as it would present the British with a bloodless victory, and be a death sentence to the German Navy. Admiral Raeder was determined that this would not happen. Most German naval planners had also come to realise that they had few options other than to return their ships through the Channel. To take them by the northern route round Scotland, which had proved a grave for the Bismarck, would subject them to enemy air power operating from land plus the superior Anglo-American battle fleets. Hitler accepted that the chances of bringing the ships safely through the Channel were only fifty-fifty, but, as always, being prepared to gamble, he insisted that a breakthrough was the only viable alternative. However, he was adamant that the risk would only be feasible if absolute secrecy was maintained and providing the enemy was taken completely by surprise.

To the complete amazement of his navy commanders, he ordered the ships to be brought through the Dover Straits in broad daylight. A naval operation of this magnitude within sight of

the English coast was without precedent and would be in utter defiance of the traditional use of capital ships.

However, Hitler's proposal deserves closer examination; initially it must have appeared tempting for the Germans to sail through the Straits of Dover at night under the cover of darkness. But the disadvantage was that the ships would have to leave Brest in broad daylight, where they were sure to be sighted. If the Royal Navy were to be alarmed immediately, it would give them sufficient time to mass a battle fleet capable of annihilating the Germans. From this viewpoint, it was considered more favourable to go through the Straits in daylight aided by the protective cover of the Luftwaffe.

Hitler persuaded his naval commanders that it would be impossible for the British in the space of just a few hours to get together the forces necessary for an organised attack. He was certain that the British would consider it inconceivable for the Germans to attempt a break out through the Channel in daylight; in this assessment he was absolutely correct. British intelligence, being aware that a break-out was possible, based their interception plan on the assumption that the Germans would leave Brest in day time. This would allow them to approach the narrowest part of the Channel, that is, the Straits of Dover, which is only 21 miles wide, during darkness. RAF Coastal Command was therefore, ordered to establish dusk to dawn reconnaissance patrols along the Channel; the navy also ordered submarine patrols during daylight hours outside Brest Harbour.

With the Royal Navy's capital ships far distant at Scapa Flow, the Germans calculated that if surprise was achieved, they could expect opposition from only light surface forces. The main threat was expected to come from air attacks and mine fields. Another obstacle for the Germans was the British radar stations strung along the Channel coast. The Germans knew that the British were ahead of them in radar development. But they were not certain how far ahead, and made plans accordingly; the effect of which will be seen later. Taking all these factors into consideration, the Germans came to the decision that, rather than dismantle the great ships; they would risk fighting them through the English Channel in daylight. The operation was code-named; operation 'Cerberus' which Hitler claimed would be the greatest naval exploit of the war. This turned out to be an accurate prediction as the venture was later to be acknowledged by friend and foe alike as an 'outstanding and daring combined operation by German naval and air forces'.

The planned schedule for the operation was;

1. Put to sea from Brest during darkness,
2. Pass through the narrows of Dover - Calais by noon the following day,
3. Navigate along the Dutch coast that afternoon,
4. Enter the North Sea and arrive at home port in the evening,

In order to achieve this, it would be essential to maintain a cruising speed of 28 knots.

The British First Sea Lord, Sir Dudley Pound, was at this time 65 years old, and a sick man. He shared the view that if the Germans decided to break out through the Channel they would reach the Straits of Dover at night; to do otherwise, he stated “would be pushing audacity to the point of folly”. As the Germans had predicted Sir Dudley was not prepared to risk the capital ships based at Scapa Flow; instead, six Swordfish torpedo carrying planes were moved to Manston on the Kent coast. Nine motor torpedo boats were stationed at Ramsgate; in addition, the admiralty alerted six 20 year old destroyers at Harwich to be prepared to intercept the German ships if they came.

In hindsight, it may be easy to dismiss the behaviour of the First Sea Lord as ineffectual and puzzling. But bear in mind; this was the blackest period of the war for Britain. Rommel’s Afrika Corps had come to the aid of Italy in North Africa which had the effect of reversing all the previous year's British gains; and the catastrophe at Singapore was looming. Sir Dudley had still not recovered from the loss of the Prince of Wales and Repulse; British naval power from Singapore to Scapa Flow was stretched to the limit. Not unlike Jellicoe at Jutland in World War One, Sir Dudley Pound was ‘the man who could lose the war in an afternoon. This weighed heavily on him and he was emphatic that, “on no account were capital ships to be brought within range of enemy air attacks". His fear was perhaps justified, for instance, what if several British battleships, operating near the occupied coast of Europe were sunk, or put out of action by determined enemy air attacks; this would undoubtedly change the whole picture of the war, particularly in European waters. In any case, Sir Dudley refused to even contemplate that the Germans would be foolhardy enough to try and bring their ships through the Dover Straits in daylight. He was convinced they would not be exposed to the RAF who would surely sink them as had the Japanese to Repulse and Prince of Wales.

Strange as it may seem, it did not seem to occur to the admiralty that although the RAF did have a most formidable bomber force whose primary objective was to bomb targets at night from a very great height; they had not been trained for the precision attacks on fast moving ships steaming at 30 knots whilst taking evasive action. The only planes which really had much chance of damaging the big ships were torpedo carriers. The British had two types of these; the Swordfish and the Beaufort. The Swordfish had been used successfully against the Bismarck, but there were only six available at the channel coast and their inexperienced crews were undergoing training. The leader of this half squadron was Eugene Esmonde, who had distinguished himself in the Bismarck operation. He was ordered to prepare his crew for a night attack on the enemy ships in the event of a break-out from Brest.

These single-engine Swordfish biplanes were designed like World War One aircraft. They had a fabric fuselage, open cockpits, and carried a crew of three, consisting of a pilot, an observer and a rear gunner. Yet these old planes could absorb tremendous punishment; anti-aircraft shells passed through the fabric instead of exploding against it. At Taranto Harbour on November 1940; operating under cover of darkness, carrier based swordfish had crippled and put out of action the main Italian fleet. However, the ‘stringbags’ as they were nicknamed had a top speed of only ninety knots, which made them sitting ducks in daylight.

The other torpedo bomber, the Beauforts, which were possibly the most serious threat to the German ships were not placed on alert. None were moved towards Dover, and this decision would bear heavily on the outcome of the operation. These aircraft were much more effective and more capable to sink or disable the German ships. They could fly at twice the speed of the swordfish, and three squadrons were available. One stationed at Leuchers in Scotland preparing for operations against the Tirpitz; the others were based in the south of England near Portsmouth. Therefore, to contest the passage of the German fleet speeding up the Channel, the Royal Navy had assembled six Swordfish torpedo planes, nine MTB's and six 20 year old destroyers. It was a pathetic force to put against a mighty German battle squadron; protected by the greatest air umbrella any ships had ever had.

The Admiralty however, was content that the combined torpedo attacks by the MTB's and Swordfish would slow down and cripple the ships. This would be accomplished while they were within range of the Dover coastal batteries, which would deliver the coup-de-grace. In the event of them managing to slip through the straits, they were to be finished by the RAF and by the destroyers. It was not much of a plan, even for a night attack!

Now that the preparations of each side have been evaluated; it is interesting to assess the actual operation and outcome. On 11th February 1942, at 22 15 hours, the Scharnhorst, Gneisenau and Prinz Eugen weighed anchor and slipped quietly out of Brest. At this moment the Germans had their first taste of good fortune; the RAF Coastal Command aircraft on patrol outside Brest harbour experienced a radar breakdown during their departure and, therefore, was unaware that the German battle squadron had sailed. The British submarine on patrol outside the harbour had abandoned watch when light faded, as the admiralty was insistent that the Germans would leave during daylight. A similar mishap befell the other aircraft which was patrolling the outer entrances. This aircraft also returned to base for radar repairs, which turned out to be a blown fuse. Another aircraft was ordered to take over, but was unable to start due to a damp spark plug. By the time these air patrols were resumed the German squadron had left harbour and were already speeding at 27 knots through the English Channel. Worse still, and this was inexcusable, the RAF had failed to notify the admiralty that the Brest patrols had not taken place. This combination of bad luck and inefficiency would emerge as a pattern for the British.

A heavy mist now descended over the Channel causing the other British patrols to be cancelled earlier than usual. Had these patrols been maintained, their radar would certainly have identified the German ships steaming off the French coast. Therefore, before the British woke up to the fact that the big ships were out; the Scharnhorst, Gneisenau, and Prinz Eugen had won a 300 mile start. They were escorted by 6 destroyers, 10 torpedo boats, numerous E boats, and an air umbrella consisting of 300 day and night fighters. The German ships racing up the Channel were almost into the Dover Straits, the 21 mile wide maximum danger zone; at this point they would be clearly visible by telescope to observers on the cliffs of Dover. Here they would be confronted with weapons which might prove formidable or even decisive; the big Dover coastal guns.

Just how effective were these weapons? After Dunkirk, Churchill, fearing invasion had ordered heavy guns to be mounted on the Dover cliffs. Four 13 inch World War One guns from the old Iron Duke class of battleship were found in Nottingham covered in cobwebs and rusting. They were cleaned up and installed near Dover. These clumsy, slow-firing guns were actually quite useless. They were difficult to load, only capable of firing at five minute intervals, and after 80 rounds, the barrel wore out.

Shortly after 10 00 hours, two Spitfires on patrol over the Channel spotted German fighter planes and climbed to engage; they had unwittingly stumbled into the outer guard of the air umbrella protecting the German ships. Almost immediately, flak shells burst around them and they were attacked by a dozen Messerschmitt's. As the Spitfires dodged the enemy fighters they sighted the big ships. The RAF orders were to maintain radio silence over the Channel and to report any sightings after returning to base. But when the Spitfire pilot realised that such a large number of ships sailing so close to the English coast must be the German battle squadron escaping from Brest; he decided this was the occasion to disobey orders, break radio silence, and report to base. At first the report was not taken seriously, nobody wanted to believe that the Germans would be making a getaway through the Channel in broad daylight. This was utterly inconceivable; the British admiralty was totally unprepared and their reaction was to be piecemeal and uncoordinated.

On this particular morning the British radar observers had something else to worry about; the previous night every radar set on the English coast had ceased to function. For the first time the Germans were operating their jamming stations in a big way and not a single British radar instrument was able to function. The ruse had succeeded, and the German squadron had been able to continue on its way undiscovered until the time of the Spitfire sighting. The controller on duty at Biggin Hill interpreted the Spitfire report accurately; at long last, the alarm was raised. The German ships had been at sea undetected for eleven hours. The controller then tried to alert headquarters only to discover the post office telephone lines were down. Eventually, the air officer in command, Air Vice-Marshall Trafford Leigh-Mallory was tracked down; he was in the process of reviewing Belgian air force units on parade and his staff officers refused to interrupt him. They were still unconvinced that it was the German fleet in the Channel, decided that it must be fishing boats and were not prepared to bother their commanding officer.

At 11 05 hours the Squadron Leader at Biggin Hill insisted that the Beaufort squadrons should be alerted, but he had no authority to do so. He did, however, telephone Esmonde at Manston, who did put his six Swordfish on readiness and requested fighter protection. This was the first decisive step taken by the British armed forces to intercept the German battle squadron as they entered the narrowest part of the Channel, and it was taken by a relatively junior officer. Leigh-Mallory, eventually came to the phone, extremely upset at being disturbed by a mere Squadron Leader. He was extremely rank conscious, but after being given the information he decided that it must be the German ships in the Channel and gave the orders to execute the operational

plan. There was in fact a British battle plan code named ‘Operation Fuller’, but the intelligence officer in charge of the operation had locked the plans in a safe and gone on leave and no one could find the key. An hour had now lapsed since the Spitfire's urgent report.

At 12 15 hours, exactly according to their timetable, the Germans arrived at the narrowest part of the Channel; between Dover and the French coast, where they were required to reduce speed and negotiate a mine field. They were at their most vulnerable and feared that the British would be waiting to sink them with massive air and sea attacks and coastal gun barrages. The British, however, had still not recovered from their initial surprise; when they eventually did, the big guns of the coastal batteries opened up. This was after the German ships were through the straits and almost out of range. The German crews saw flashes from the cliffs and several splashes in the sea. Although the shells fell short and uneven, it meant that there was no longer any doubt that they had been detected. Smoke shells were ordered to be fired from the escorting E Boats to shield the big ships. The gunfire from the English shore soon ceased when the German coastal batteries in France opened up in reply; no hits were reported.

As the German ships reached the Belgian coastline, the British launched the MTB's who raced out towards them at a top speed of 27 knots. The German ships were now cruising at their maximum speed of 30 knots and the protecting screen of E Boats could make 35 knots. The MTB's were outperformed and lighter-armed than the E Boats as they came under a tremendous concentration of fire from sea and air. They were forced to fire their torpedoes from maximum range which gave the German ships plenty of time to manoeuvre

The first battle of the straits had been lost. In the meantime Esmonde awaited orders to launch an attack with his Swordfish that were trained for night operations. To send these slow-moving planes in daylight against the ferocious flak and heavy fighter escorts was certain death. The indecisive senior officers at the admiralty let Esmonde decide whether to attack or not, no one was prepared to give him a direct order on a suicide mission. Esmonde, being a dedicated regular officer, and obviously a very brave individual, felt he had no other choice but to attack. He realised that as the German ships were moving so fast he would need to make an immediate decision. Having a top speed of only 90 knots, if they did not take off at once they would lose the enemy ships. He was told there would be plenty of air cover from the spitfires with whom they would rendezvous once airborne. All six planes lumbered into the air. Without hesitation, the Swordfish crews flew courageously, going to their doom in a futile operation; few would survive this mission. Four minutes after the arranged rendezvous time with the escorting

Spitfires the Swordfish were still orbiting over the coast of Kent. Only ten Spitfires had arrived, Esmonde decided that it was now or never. The rest of the escort fighters would catch them up; they never did due to administrative bungling and eighteen young men in six slow, old aircraft went on their way. If any mission could be described as suicidal, this certainly was one.

Three of the Swordfish actually managed to get through the German fighter screen and massive flak barrage to drop their torpedoes on target that were all evaded by the Germans. One after another they were blown to pieces and massacred. There were only five survivors; Esmonde was not one of them. He was later awarded the posthumous VC. As the last of the six torpedo planes blew up and splashed into the sea, the German fighters gave a victory roll over the ships before resuming their patrol. It was 12 45 hours and the German ships were heading up the coast of Holland into the North Sea. While Esmonde's Swordfish were giving the Germans their first real taste of opposition and being shot to pieces, through a combination of inefficient ground work and bad weather the rest of the RAF fighters either took off too late or got lost in the mist.

The six old destroyers from Harwich now launched their attack; they were also slower than the German ships and had to risk going through a minefield to intercept them. Meanwhile, the torpedo carrying Beauforts, the RAF's most important ship-busting aircraft were finally ordered to fly to Manston. Delayed by ground staff incompetence; some of the Beauforts were armed with bombs and not torpedo's. The distance from their base in Portsmouth to Manston where Esmonde's Swordfish were based is 120 miles; if they had left at the same time as Esmonde took off they could, by flying at twice his speed, have joined him to deliver a coordinated attack. Inexplicably, rather than let those armed with torpedoes take off and join Esmonde it was decided to hold back the entire squadron until they were all ready. The Beauforts from Leuchers in Scotland arrived over Manston and circled for over an hour awaiting orders which Manston ground staff were frantically signalling on the wrong frequency. No one had told Manston that these aircraft had recently had their radio frequencies changed. It was only when they were forced to land and re-fuel that this botch-up was discovered. In addition to this; several of the Beauforts landed at Manston expecting to be armed with torpedoes, only to find that none were available. No one had checked how many were in store.

When they eventually set off, it was with orders to attack a German merchant convoy. No one had told them of their real mission, and in the utter chaos, the Beauforts' Spitfire escorts flew off in another direction looking for them. At 15 45 hours a few of the Beauforts found the German

ships, but due to the lack of fighter protection and the concentration of flak; dropped their torpedoes at maximum range, missed the target and returned to base. While the torpedo-carrying Beauforts were struggling against the continuing ground muddle, Bomber Command finally came to life. 675 aircraft took off, most of which had been on bombing raids over Germany the previous night. The majority of the aircraft could not find any target and did not really know what they were looking for. At one stage a squadron of Hudsons was told to follow the Beauforts out to the German ships. The Beauforts, however had been told that they were to follow the Hudsons to the target; the result was that every time the Hudsons formed behind the Beauforts, the Beauforts would fall back behind the Hudsons. This ring-a-ring of rose's ridiculous situation continued for half an hour before the Wing Commander of the Beauforts became totally exasperated and decided he had enough and led his aircraft out to sea.

The British destroyers by this time had worked their way through the minefield, but never got within striking distance of the German ships. In many instances they were attacked indiscriminately by both British and German aircraft. They did, however, press forward to try and launch their torpedoes from a range of two miles. All missed and the destroyers, though severely damaged managed to limp back to port.

The German ships succeeded in avoiding the bombs and shells by skilful manoeuvring. Mines, however, proved to be a greater danger; at 14 31 hours, the leading ship, Scharnhorst hit her first mine off the Dutch coast and was lifted bodily out of the water. Electric installations failed, the rudder no longer functioned and the gyro-compass was out of action. The Scharnhorst was left rolling helplessly in the North Sea swell; a sitting target for the vengeance of the British. The Scharnhorst crew worked feverishly to repair the damage whilst the Luftwaffe and escorting vessels prepared to hold off the enemy who never came. The ships engineer's surpassed themselves and in just over half an hour got the ship going again. The Scharnhorst, however, hit a second mine in the evening as she approached German waters. With 1 000 tons of water in her hull, and almost out of control, she nevertheless reached port due to the coolness and excellent seamanship of her captain. Later that same evening, Gneisenau struck a mine, but also managed to reach port.

What were the result and the reaction to this operation? The German losses were 17 Luftwaffe planes, 2 torpedo boats damaged by bombs, two dead and several German sailors wounded. All Germany rejoiced over the feat which was hailed as a mighty blow against an enemy who had ruled the waves for centuries. At 01 00 hours in London the First Sea Lord, Sir Dudley

Pound conceded that the German ships must have reached the safety of home waters. He phoned Churchill to make one of the worst reports a British admiral has ever had to make to a British prime minister. Typically, Churchill growled "why" and slammed the phone down. The RAF officers blamed the disaster upon the fact that very few pilots really knew what they were looking for due to the ridiculous lack of information. One totally frustrated Beaufort Squadron

Leader declared, "I was sent looking for a convoy, why was I not told about the bloody great battleships"? He continued; "The reasons the German ships got through is not that the plan to stop them was badly executed or that it miscarried; the real trouble is that there was no plan at all. We relied far too much on hasty improvisation".

Nearly 700 fighters and bombers had been flung into the battle without success because they were too late and completely uncoordinated. Thirteen young fleet air arm pilots had been sent uselessly to their deaths; twenty seven young sailors had been killed and eighteen wounded. The fury unleashed by the military commanders was not isolated; it sent an electric tremor of outrage through the country. The nation was ashamed and affronted; British minds went back to Sir Francis Drake and the Spanish Armada; in effect, it spelled the end of the Royal Navy legend, which decreed: 'in wartime no hostile warships would be permitted to neither approach so close to the English coast nor pass through what was proudly called the English Channel'.

In the entire British press a storm of indignation arose; how could this have happened right under their very noses? British public opinion was furious at the success of the channel dash. The war cabinet was violently attacked, causing a crisis of confidence in Churchill's wartime cabinet. The Times, for example, thundered; "the German navy has succeeded where the Spanish Armada of 1588 failed". It continued, "nothing more mortifying to the pride of our sea power has ever happened in home waters".

National and provincial newspapers joined with the Times in voicing indignation that this humiliating disaster had been allowed to happen. The news chronicle stated "though individual courage and steadfast devotion to duty was evident, those primarily responsible for the war's greatest blunder must be brought to book". The newspaper attacked Churchill's war time cabinet by stating: "the incident is symptomatic of a general feeling that something is wrong with Britain's war effort; the tired and incompetent people occupying high office should be removed".

Conversely, while British newspapers roared their disapproval, the Germans were ecstatic with their victory. Especially the reference to the Spanish Armada; Hitler had been proved right.

Faced with the same allegation of 'bungling in high office' which forced him out of office in World War One; Churchill took the unprecedented step, during war time that is, of ordering a military tribunal to be set up to investigate the break-out. The findings however, of this report were shrouded in secrecy and not even the members of parliament were allowed to see it. Churchill as defiant and truculent as ever, scowled at questions in the house by saying "our affairs are not conducted entirely by simpletons and dunderheads, as the comic papers try to depict".

Despite this attempt at reassuring the nation, there was much evidence of reports concerning the Channel Dash of going missing and officers being shunted to lesser posts. Three days later on 15th February, the British army surrendered at Singapore in one of the most ignominious fiascos of modern military history.

The Channel Dash plus Singapore made black February of 1942 the lowest point of the entire war for Great Britain. Churchill, now 67 years old was under severe pressure to throw in his hand. However, the pugnacious war time leader was not prepared to surrender high office. In retrospect, perhaps it is understandable that Churchill should cover up the disaster. The British public were already despondent enough about defeats from Dunkirk to Singapore. There was no point in dismaying them further by revealing the full facts of the military and bureaucratic inefficiency which allowed the German warships to sail unscathed past the cliffs of Dover. The unpalatable truth which Churchill dared not reveal to the angry and disturbed British public was that some of his service chiefs had proved themselves to be tragically incompetent. It makes one wonder what might have been the outcome if Hitler had gone ahead with his plans to invade Britain.

The break-out of the ships was a supreme example of meticulous German planning and efficiency; defeating the hasty last minute improvisations of the British, however, there were compensating advantages for the British. The major one being that the threat from Brest to the Atlantic convoys had been eliminated and no further attempt would be made to throw German capital ships into the battle of the Atlantic. Churchill stated after the war "viewed in the aftermath and in the overall context, the episode was of great benefit to us". One man who agreed with him was Grand Admiral Raeder, who during interrogation at the war's end, commented "it was a tactical success but a strategic defeat".

These points merit closer analysis; why was the Channel Dash not a total defeat for Britain? Perhaps the answer to this question is that although the German ships achieved startling success in escaping through the Channel, their careers as fighting ships soon ended. A fortnight after arriving back in Germany, Allied bombers had their revenge by finishing off the Gneisenau. The damage caused by the mine struck whilst escaping up the Channel had made it necessary for her to enter the dry dock at Kiel for repairs. The RAF took full advantage of this opportunity and made her the target of massive air attacks; smashing her bows and foredecks. It was the end of the Gneisenau as an operational sea fighting ship. She was towed to Danzig, her hull was filled with concrete and she suffered the ultimate humiliation of becoming a block ship.

After repairs, the Scharnhorst, only got into Norwegian waters in March 1943. Her fate was sealed in December 1943 when she was cornered off the North Cape by the British home fleet. The Scharnhorst was put out of action by the battleship Duke of York and the escorting destroyers finished her off with their torpedoes; only thirty six of Scharnhorst's crew, who had participated in the Channel Dash, out of a complement of almost two thousand survived.

Prinz Eugen, unscathed in the Channel Dash, was soon ordered to make for Trondheim in Norway. But was torpedoed en route by a British submarine and had to turn back, never venturing to sea operationally again. At the war's end the Americans took possession of her and she was sunk in atomic bomb tests.

In the final analysis it must be realised that the German navy's brilliant exploit, and it should be remembered was one of Hitler's better inspirations was of no great long term military significance.

Nevertheless, the Channel Dash was a major triumph for the Germans. For the British, it was a terrible humiliation, and very nearly brought down the Churchill administration, with all its ramifications.

CHAPTER NINE

CORAL SEA

After Pearl Harbor, the Japanese aimed to invade New Guinea and the Solomon Islands. U.S. forces, aided by some Australian ships, moved to intercept them. This produced the first naval battle fought at long range between aircraft carriers. Dive bombers and torpedo bombers attacked ships protected by screens of fighters. It was a novel and confusing form of warfare, with both sides struggling to find the enemy and unclear about what ships they had seen and engaged. The most serious loss was the American carrier USS Lexington, scuttled after catching fire. The fight forced Japan to call off its invasion plans.

In the spring of 1942, following their rapid successes during the early months after their entry into the war, the Japanese were ready to extend their control over the Coral Sea by capturing Port Moresby in New Guinea; thus isolating Australia from Allied help and opening the way for further advances in the southwest. The battle which ensued was the first naval battle to be fought entirely by aircraft; no ship on either side made visual contact with the enemy.

The Japanese had made great gains in the vast Pacific Ocean. The conquest of the Philippines, Burma, Malaya and the Dutch East Indies had cost the Japanese Navy only 23 warships and none had been larger than a destroyer. 67 transport ships had also been lost. The Japanese naval command had expected far greater losses, therefore, encouraged by such success, they looked to expand still further in the Far East. However, the senior officers in the Japanese Navy disagreed on what was the best way forward.

The very success which the Japanese had achieved in implementing their initial war plans had raised a fresh series of questions in the minds of those responsible for shaping Japanese naval strategy. And had caused a fierce and prolonged debate among the higher echelons of the Japanese naval command.

The Naval General Staff, headed by Admiral Nagano, advocated either an advance westward against India and Ceylon, or a thrust southward towards Australia. Admiral Yamamoto and the staff of the Combined Fleet, on the other hand, argued that a prolonged struggle would be fatal to Japanese interests, and regarded the first priority as being the destruction of the United States aircraft-carriers in the Pacific, to maintain Japanese security in the area. To this end, they urged early operations against Midway, to the eastward, seeing this as necessary for an attack on Hawaii. With the presence of the Combined Fleet in Hawaiian waters to support an

invasion, the United States fleet would certainly be drawn out into a decisive battle, and could be dealt with before the Allies brought their emerging superior resources to bear against Japan.

The Japanese army, with its eyes on the Asian mainland and on Russia, objected to committing the large numbers of troops needed for the Naval General Staff's plans, and forced the latter to work out a more modest scheme. This involved moving from Rabaul and Truk, where Japanese forces were already firmly entrenched, into Eastern New Guinea, and down the Solomons and New Hebrides to New Caledonia, the Fijis, and Samoa.

In theory, the formulation of Japanese strategy was the responsibility of the Army and Navy General Staffs, operating jointly as sections of Imperial General Headquarters. In practice, however, the ability of the Combined Fleet to influence strategy had been demonstrated by Yamamoto's insistence on the Pearl Harbour operation, despite the opposition of the General Staff. Subsequent events served to reinforce that influence.

It was the Americans who forced the hand of the Japanese. On the 18th April 1942, the Doolittle raid on Tokyo, launched from the aircraft-carrier Hornet, inevitably strengthened Yamamoto's case for the Midway operation, particularly in the failure to keep the capital itself immune from bombing attacks. The opposition of the General Staff promptly vanished. By 5th May, Admiral Nagano, Chief of the Naval General Staff, and acting in the name of the Emperor, issued Imperial General Headquarters Navy Order 18 which directed Yamamoto to; 'carry out the occupation of Midway Island and key points in the Western Aleutians in cooperation with the army'. The operation to take place early in June.

However, the Japanese had decided on a course of action that spilt their forces. The attack on New Guinea had already started and could not be called off as it was too far advanced. Therefore, Yamamoto could not call on all the forces he might have needed for an attack on Midway Island as some Japanese forces were concentrated in the Coral Sea to the south-east of New Guinea. Thereby forcing upon the Japanese two concurrent strategies which were destined to over extend their forces. The plan for the impending Operation 'MO' was based on simple premises, but was over elaborate in the detail by which it was to be carried out. In fact this plan was too complicated, revealing a typical weakness which was evident throughout the war. It demanded a level of tactical competence which the Japanese did not possess. The division of forces in the plan might well be fatal to its prospects of success, should the Japanese

meet a determined enemy when they were not in a position to concentrate and coordinate the separate units effectively.

The occupation of Port Moresby had originally been scheduled for March, but the appearance of American carrier forces in the south-west Pacific had caused the Japanese to postpone the operation until early in May, so that the V Carrier Division of the Nagumo force, then returning to Japan after the Indian Ocean operations, could be used to reinforce the IV Fleet at Truk and Rabaul. The V Carrier Division, under Rear-Admiral Hara, contained the powerful aircraft-carriers Shokaku and Zuikaku. A number of heavy cruisers which had seen service in the Indies were also spared for the invasion, together with the light aircraft-carrier Shoho from the Combined Fleet. The remainder would have to be furnished by the IV Fleet, under Vice Admiral Inouye, who was given overall command of the operation.

The next encounter, the Battle of the Coral Sea, came about because Admiral Yamamoto's cherished decisive battle had not yet come about. His strategy had worked well so far, the US Pacific Battle Fleet had been destroyed and a chain of Island bases had been established to protect the new conquests. But still the American carriers eluded him, as the Doolittle raid on Tokyo showed only too clearly. It was recognised by the Army that Australia was an important base for any counter-offensive aimed at their own base at Rabaul. Yamamoto did not believe that the South-western Pacific would provide the decisive battle (his staff was planning for that in a strike against Midway), but he acquiesced to the Army's plans. It all looked so easy to him after the staggering series of victories and the Japanese were becoming drunk with success.

The operation included an amphibious invasion of Port Moresby and the capture of Tulagi in the Solomons. The Japanese labelled the attack on Port Moresby as ‘Operation MO’ and the force that was to attack it was 'Task Force MO'. The main part of the Japanese plan was to move through the Jomard Passage, to the south-east of New Guinea, allowing it to attack Port Moresby.

The organisation of Task Force MO, which was to execute the plan, comprised:

- The Port Moresby Invasion Group of 11 transports, carrying both army troops and a naval landing force, which, screened by destroyers, were to come down from Rabaul and around New Guinea through the Jomard Passage;
- A smaller Tulagi Invasion Group for setting up a seaplane base there;

- A Covering Group, under Rear Admiral Goto, consisting of the Shoho, four heavy cruisers, and one destroyer, which was to cover the Tulagi landing, then turn back west to protect the Port Moresby Invasion Group;

- The Striking Force, commanded by Vice Admiral Takagi, and containing the Shokaku and Zuikaku, which was to come down from Truk to deal with any United States forces that might attempt to interfere.

The Carrier Strike Force left Truk on 1st May and by the afternoon of 5th May it was in position. Its opposition was Task Force 17 with the aircraft-carriers Lexington and Yorktown. The Americans had a slight edge over the Japanese in aircraft. They also had radar, but above all they had the benefit of superior intelligence about the Japanese dispositions.

Since Pearl Harbor, the United States had succeeded in completely breaking the Japanese naval code, and therefore possessed accurate and fairly detailed intelligence concerning the Japanese plans. Not only had the Americans broken the code, so that Admiral Nimitz and his staff knew exactly what the Japanese objectives would be, but there was a constant flow of reports from the Australian' Coast watcher's', who reported sightings of Japanese ship movements.

Naturally, Inouye expected opposition from the Allied forces in the south-west Pacific. He knew that about 200 land-based aircraft were operating from airfields in northern Australia, and that American air activity made the concealment of ship movements difficult. However, he estimated that Allied naval forces in the area were 'not great', and that only one aircraft-carrier, the Saratoga, would be available. He hoped that the prior occupation of Tulagi, due to be taken on May 3rd, and the establishment of a seaplane base there, would make it more difficult for the Allies to follow his movements from their nearest bases at Port Moresby and Noumea. The Support and Covering Groups and the Striking Force would cover the Port Moresby Invasion Group which would leave Rabaul on 4th May, and land a sizeable force on the seventh. Once the Allied task force entered the Coral Sea, Inouye thought he could destroy it by a pincer movement, with Goto on the west flank and Takagi on the east, while the Invasion Group slipped through the Jomard Passage to its destination. With the Allied force out of the way, he could then proceed with the bombing of bases in Australia

To the Allies, Port Moresby was vital not only for the security of Australia, but also as a springboard for future offensives in the south-west Pacific. Admiral Chester Nimitz,

Commander-in-Chief of the United States Pacific Fleet (CINCPAC), and General Douglas MacArthur, Commander-in-Chief Southwest Pacific Area, thus gave the threat the attention it merited. Before 17th April, reports had reached CINCPAC headquarters that a group of transports, protected by the light aircraft-carrier Shoho and a striking force that included two large aircraft-carriers, would soon enter the Coral Sea. By the 20th Nimitz had concluded that Port Moresby was the objective, with the attack likely to develop on or after 3rd May.

It was one thing to know the nature of the task, but yet another to be able to summon up the resources to meet the situation. The Saratoga was in fact still in Puget Sound undergoing repairs for torpedo damage sustained in January. The aircraft-carriers Enterprise and Hornet did not return from the Tokyo raid until April 25th, and were unlikely to reach the Coral Sea in time to participate in the coming battle, bearing in mind that they needed a minimum of five days for upkeep, and Pearl Harbor was about 3 500 miles away.

The problem with the American command structure was the rigid demarcation of command between Nimitz and MacArthur, according to the decision of the Combined Chiefs-of-Staff, whereby CINCPAC could exercise control over all naval operations in the Pacific, but could not usurp MacArthur's command of ground forces or land-based aircraft within the latter's area. Thus Nimitz could not readily call upon the 300 odd land-based aircraft of the USAAF and the RAAF for air searches in the area. Inouye, on the contrary, had the XXV Air Flotilla at Rabaul, as well as all seaplanes, under his control.

Knowing, however, that he would have to rely mainly on air strike to frustrate Inouye's plans, Nimitz decided to utilise what' remaining aircraft-carrier strength was available to him. For this task, he called upon the air groups of the Yorktown and Lexington. The Yorktown task force (No. 17) included 3 heavy cruisers, 6 destroyers, and the tanker Neosho.

The Lexington task force (No. 11) was fresher, having left Pearl Harbor on 16th April, after three weeks' maintenance. With the 'Lady Lex', as she was affectionately known, were 2 heavy cruisers and 5 destroyers. Commanded by Captain Sherman, the Lexington could truly be called a happy ship; many of her crew had served with her since she was commissioned in 1927, while her air group included such notable naval aviators as 'Butch' O'Hare and John Thach. Rear-Admiral Aubrey Fitch, a distinguished carrier-tactician, had been on the flag bridge since 3rd April. Task Force 17, with the Yorktown, was commanded by Rear-Admiral Frank Fletcher, and had already been in the area for two months.

Task Force 1, operating out of San Francisco, consisted mainly of pre-war battleships; these were simply not fast enough to keep up with the aircraft-carriers, nor could the oilers be spared to attend to their fuel requirements. All that remained were the ships of task Force 44; commanded by Rear Admiral Grace, RN. Of these, the Australian heavy cruisers Australia and Hobart, then in Sydney, were ordered to rendezvous with Fletcher in the Coral Sea on 4th May. The heavy cruiser USS Chicago and a destroyer were ordered to join the same commander three days earlier, on 1st May.

On 29th April, Nimitz completed his plans. These simply detailed Fletcher to exercise tactical command of the whole force, designated Task Force 17, and ordered him to operate in the Coral Sea commencing 1st May. The manner in which Inouye's threat was to be met was left almost entirely to Fletcher.

Fitch's Lexington force joined Fletcher as planned at 06 30 hours on 1st May, and immediately came under Fletcher's tactical command. At 07 00 hours, Fletcher commenced refuelling from the Neosho, and directed Fitch to do the same from the Tippecanoe, a few miles to the south-west. Fitch had estimated that this task would not be completed until noon on the 4th, whereas Fletcher would finish 'topping up' by 2nd May. In the light of reports of the enemy's approach, Fletcher decided that he could not wait for Fitch and Grace, and steamed out into the middle of the Coral Sea to search for the Japanese. He headed west on the 2nd, leaving orders for Fitch to rejoin him by daylight on the fourth.

By 08 00 hours on 3rd May, Fletcher and Fitch were over 100 miles apart, each ignorant of the enemy's detailed movements. In fact, the junior flag officer was to finish fuelling by 13 10 hours, but could not break radio silence to tell Fletcher of this fact, and instead headed towards the planned rendezvous. At 19 00 hours the Yorktown force, now out on a limb, received the report which Fletcher 'had been waiting two months' to hear: the Japanese were landing at Tulagi.

The news brought about an immediate change in Fletcher's plans. Ordering the Neosho and Russell to peel off and meet Fitch and Grace at the appointed rendezvous, then proceed with them in an easterly direction to rejoin Yorktown 300 miles south of Guadalcanal on 5th May. Fletcher headed north at 24 knots, determined to strike Tulagi with the Yorktown's available aircraft. Maintaining his course throughout the night, he arrived at a point about 100 miles south-west of Guadalcanal at 07 00 hours on the fourth. By this time Fitch had received his new orders, while Grace, with Australia and Hobart, was nearing the rendezvous. Both were unable

to help Fletcher in case of need, their south easterly course actually increasing the distance between them and the Yorktown.

Fortunately for Fletcher, the Japanese had estimated that, once Tulagi was in their hands, it would remain unmolested. Goto's and Marushige's groups, which had supported the operation, had consequently retired at 11 00 hours on 3rd May, after the island had been secured. Hara's carriers were still north of Bougainville, while the Port Moresby Invasion Group was only just leaving Rabaul. Furthermore, as Fletcher approached the launching position for his strike, he ran into the northern edge of an l00 mile cold front-which screened his warships, and afforded a curtain for his planes until they came within 20 miles of Tulagi, where fair weather prevailed.

First blood went to the Americans, when the invasion transports in Tulagi harbour were sighted. At 06 30 hours on 4th May, the first strike was launched from Yorktown, consisting of 12 Devastator torpedo bombers and 28 Dauntless dive-bombers. With only 18 fighters available for patrol over the carrier, they were forced to rely on their own machine guns for protection. According to the practice of the time, each squadron attacked independently. As so often happened during the war, the pilots overestimated what they saw, mistaking a minelayer, for a light cruiser, minesweepers for transports, and landing barges for gunboats. Beginning their attacks at 08 15 hours, aircraft of the two Dauntless squadrons and the Devastator squadron were back on Yorktown by 09 31 hours, having irreparably damaged the destroyer Kikuzuki and sunk 3 minesweepers, including the Tama Maru. A second strike later destroyed 2 seaplanes and damaged a patrol craft, at the cost of one torpedo-bomber; while a third attack of 21 Dauntlesses, launched at 14 00 hours, dropped 21 half-ton bombs, but sank only 4 landing barges.

By 16 32 hours the last returning aircraft were safely landed on the *Yorktown,* and the 'Battle' of Tulagi was over. Only 3 aircraft had been lost, the other two being Wildcat fighters which had lost their way returning to the aircraft-carrier and had crash-landed on Guadalcanal, the pilots being picked up that night by the Hammann. But, in the words of Nimitz: “The Tulagi operation was certainly disappointing in terms of ammunition expended to results obtained”.

Nevertheless, a mood of considerable elation prevailed on the Yorktown that evening, the pilots believing that they had sunk 2 destroyers, 2 freighters, 4 gunboats, and damaged a third destroyer, and a seaplane tender. Fletcher headed the whole force south for his rendezvous with Fitch. Once again luck had been with him', for Takagi was by now making his best speed

south-eastward from Bougainville, having received calls for help from Tulagi at noon that day. If Fletcher had not achieved complete surprise in his Tulagi strike, and Takagi had moved earlier, the Yorktown would have met the Japanese aircraft-carriers on her own, as Fitch was widening the gap between Fletcher and himself all through the daylight hours of the fourth.

The next day, the 5th, was a relatively uneventful one for both sides. Having rejoined Fitch and Grace at the scheduled point at 08 16 hours, Fletcher spent most of the day re-fuelling from *Neosho,* within visual signalling distance of the junior flag commanders on a south-easterly course. The ships were by now well out of the cold front and were to mostly enjoy perfect tropic seas weather for the next two days.

Meanwhile, the various components of the Japanese force were entering the Coral Sea. Admiral Takagi's Striking Force was moving down along the outer coast of the Solomons. By dawn on 6th May it was well into the Coral Sea. The Port Moresby Invasion Group and Marushige's Support Group were on a southerly course for the Jomard Passage, while Goto's Covering Group began re-fuelling south of Bougainville, completing this task by 08 30 hours the next morning. One four-engined Japanese seaplane, operating from Rabaul, was shot down by a Wildcat from Yorktown but, as Inouye did not know where it had been lost, he used most of his aircraft on a bombing attack on Port Moresby.

On the 6th, the tension grew, as both Fletcher and Inouye knew that the clash was bound to come soon. The American commander decided that it was now time to put into effect his operational order of 1st May, and accordingly redeployed his force for battle. An attack group, under Rear-Admiral Kinkaid, was formed from the four heavy cruisers, the light cruiser Astoria, plus five destroyers. The heavy cruisers Australia, Hobart, and Chicago, with two destroyers formed Grace's support group, while the air group, to be placed under the tactical command of Fitch during air operations, comprised the Yorktown and Lexington, and four destroyers. The oiler Neosho, escorted by the destroyer Sims, was detached from Task Force 17, and ordered to head south for the next fuelling rendezvous, which was reached next morning.

Throughout the 5th and 6th, Fletcher was receiving reports from Intelligence regarding the movements of Japanese ships of nearly every type; by the afternoon of the 6 th, a pattern was becoming evident to him. It was now fairly obvious that the Japanese invasion force would

come through the Jomard Passage on the 7th or 8th, and Fletcher accordingly cut short fuelling operations, heading north-westward to be within striking distance by daylight on the seventh.

Owing to the inadequacies of land-based air searches, he did not as yet have any clear picture of the movements of Takagi's aircraft-carriers, or of the Japanese plan to envelop him. His own air searches had in fact stopped just short of Takagi's force, which was hidden under an overcast, having turned due south that morning, thus dropping down on Fletcher's line of advance. By midnight Task Force 17 was about 310 miles from Deboyne Island, near New Guinea, where the Japanese had established a seaplane base to cover their advance.

If the air searches of either side had been more successful, the main action of the Coral Sea might have taken place on 6th May. Takagi, amazingly, ordered no long-range searches on 6th, thus missing the opportunity of catching Fletcher while the latter was re-fuelling in bright sunlight. A reconnaissance aircraft from Rabaul did report Fletcher's position correctly, but the report did not reach Takagi until the next day. At one point he was only 70 miles away from Task Force 17, but ignorant of its presence. Thus when he turned north in the early evening, to protect the Port Moresby Invasion Group, he once more drew away from the United States aircraft-carriers.

Some elements of the Japanese force had, however, been sighted on 6th May. B-17 s from Australia had located and bombed the Shoho, of Goto's Covering Group, south of Bougainville. The bombs had fallen wide, but Allied planes spotted Goto again around noon, then turned south to locate the Port Moresby Invasion force near the Jomard Passage. Estimating that Fletcher was about 500 miles to the south-west, and expecting him to attack the next day, Inouye ordered that all operations should continue according to schedule. At midnight the invasion transports were near Misima Island, ready to slip through the Jomard Passage. Goto, protecting the left flank of the Port Moresby Invasion Group, was about 90 miles northeast. The Japanese were in an optimistic mood, for everything was going to plan, and that very day they had heard the news of the fall of the Philippines and the surrender of General Wainwright's forces on Corregidor.

Fortune indeed smiled on Fletcher that day. At 06 45 hours, when a little over 120 miles south of Rossel Island, he ordered Grace's support group to push ahead on a north-westerly course to attack the Port Moresby Invasion Group, while the rest of Task Force 17 turned north. Apparently Fletcher, who expected an air duel with Takagi's aircraft-carriers, wished to prevent

the invasion regardless of his own fate but, by detaching Grace, was in fact weakening his own anti-aircraft screen while depriving part of his force of the protection of carrier air cover.

The consequences of this move might have been fatal, however, instead, the Japanese were to make another vital error by concentrating their land-based air groups on Grace rather than Fletcher's aircraft carriers. A Japanese seaplane spotted the support group, when the ships of Grace's force were south of Jomard Passage. Eleven single-engined bombers launched an unsuccessful attack. Soon afterwards, 12 Sallys (land-based navy bombers) came in low, dropping 8 torpedoes. These were avoided by violent manoeuvres, and 5 of the bombers were shot down. Then 19 high-flying bombers attacked from 15 000 to 20 000 feet, the ships dodging the bombs as they had the torpedoes.

Gato's Covering Group, had turned south-east into the wind to launch four reconnaissance aircraft and to send up other aircraft to protect the invasion force 30 miles to the south-west. By 08 30 hours Goto knew exactly where Fletcher was, and ordered Shoho to .prepare for an attack. Other aircraft had meanwhile spotted Grace's ships to the west. The result of these reports was to make Inouye anxious for the security of the Invasion Group, and at 09 00 hours he ordered it to turn away instead of entering Jomard Passage, thus keeping it out of harm's way until Fletcher and Grace had been dealt with. In fact, this was the nearest the transports got to their goal.

Fletcher had also launched a search mission from Yorktown. One of her reconnaissance aircraft reported 'two carriers and four heavy cruisers' about 225 miles to the north-west. Assuming that this was Takagi's Striking Force, Fletcher launched .a total of 93 aircraft between 09 26 hours and 10 30 hours, leaving 47 for combat patrol. By this time Task Force 17 had re-entered the cold front, while Goto's force lay in bright sunlight near the reported position of the two ‘carriers'. However, no sooner had Yorktown's attack group become airborne than her scouts returned, and it immediately became obvious that the 'two carriers and four heavy cruisers' should have read 'two heavy cruisers and two destroyers' - the error being due to the improper arrangement of the pilot's coding pad. Actually the vessels seen were two light cruisers and two gunboats of Marushige's Support Group. Fletcher, now knowing that he had sent a major strike against a minor target, courageously allowed the strike to proceed, thinking that with the invasion force nearby there must be some profitable targets in the vicinity.

The next day the battle began in earnest. Accepting Hara's recommendation that a thorough search to the south should be made before he moved to provide cover for the Port Moresby Invasion Group, Takagi accordingly launched reconnaissance aircraft at 06 00 hours. As Hara later admitted: “It did not prove to be a fortunate decision”. At 07 36 hours one of the aircraft reported sighting an aircraft carrier and a cruiser at the eastern edge of the search sector, and Hara, accepting this evaluation, closed distance and ordered an all-out bombing and torpedo attack. In fact, the vessels which had been sighted were the luckless Neosho and her escorting destroyer, USS Sims.

Fifteen high-level bombers attacked, but failed to hit their targets. However, about noon, a further attack by 36 dive-bombers sealed the fate of the destroyer. Three 500 pound bombs hit the Sims, of which two exploded in her engine room. The ship buckled and sank stern first within a few minutes, with the loss of three hundred and seventy nine lives. Meanwhile, 20 dive-bombers had turned their attention to Neosho, scoring seven direct hits and causing blazing gasoline to flow along her decks. Although some hands took the order to 'make preparations to abandon ship and stand by' as a signal to jump over the side, the Neosho was in fact to drift in a westerly direction until 11th May, when one hundred and twenty three men were taken off by the destroyer Henley and the oiler was scuttled. But the sacrifice of these two ships was not vain, for if Hara's planes had not been drawn off in this way, the Japanese might have found and attacked Fletcher.

Five precious hours were lost in this uncharacteristically inept affair and Takagi lost his chance to locate and engage TF 17. In a belated attempt to save the day, the Japanese launched another strike at the Yorktown, but an error in calculating the target's position led the strike astray. On their way back they were hammered by the Yorktown's Combat Air Patrol (CAP), which shot down 9 aircraft for the loss of 2 of their own. The survivors then lost their way and four even tried to land on Yorktown in error, until the carriers opened fire.

The Japanese had wasted almost 20 percent of their strength, all for an oiler and a destroyer, and still the American carriers had not been located. The Japanese carriers turned northwards, while the Yorktown turned southeast to clear a patch of bad weather which was hindering flying, but during the night the Japanese reversed their course so as to be able to engage shortly after dawn. They kept in touch with the Yorktown's movements and were able to launch a dawn search next morning, with a strike to follow as soon as the target was located.

Rear-Admiral Fletcher handed over tactical command to Rear-Admiral Fitch in the Lexington, who ordered a big search to be flown off at 06 25 hours. At about 08 00 hours a Japanese plane radioed a sighting report which was intercepted by the Americans and passed to Fitch, but almost immediately this disquieting news was followed by a report that the Japanese carriers had been found. A combined strike of 84 aircraft was put up by the Lexington and Saratoga, but 30 minutes earlier the Japanese had launched their own strike of 69 aircraft. The world's first carrier-versus-carrier battle had started.

The two American carriers' strikes were about 20 minutes apart and so Yorktown struck first with 9 torpedo bombers and 24 dive-bombers. The torpedo strike was a failure, but two bombs hit Shokaku, one forward which started an avgas (aviation fuel) fire, and one aft which wrecked the engine repair workshop. Lexington's group made a navigation error and so failed to find the target; after nearly an hour's search only4 dive-bombers and 11 torpedo-bombers had sufficient fuel left for an attack when they sighted the smoke from the burning Shokaku. Only one bomb hit, on the starboard side of the bridge, which caused little damage and 5 aircraft were shot down by the Japanese.

The Japanese attack began at 11 18 hours, with 51 bombers and 18 fighters operating as a single unit. The raid was detected at nearly 70 miles range on Lexington's radar, but a series of errors positioned the defending Wildcats at the wrong altitude. To make matters worse they were not stationed at a reasonable distance from the carrier, so that only 3 fighters made contact before the attack developed. There were also 12 Dauntless dive-bombers stationed at 2 000 feet three miles outside the screen to try to break up the torpedo-bombers' attacks. The Japanese torpedo-bombers were flying much higher than anticipated, and they simply flew over the Dauntlesses to take up their dropping height inside the carriers' destroyer screen, but were largely ineffective.

The attack group from Lexington, well ahead of the Yorktown aircraft, was nearing the target location shortly after 11 00 hours, when Lieutenant-Commander Hamilton; leading one of Lexington's Dauntless squadrons, spotted an aircraft-carrier, two or three cruisers, and some destroyers, about 25 miles to the starboard. This was the Shoho with the rest of Goto's Covering Group. As the Shoho was only 35 miles south-east of the original target location, it was a simple matter to re-direct the attack groups over the carrier. The first attack, succeeded only in blowing 5 aircraft over the Shoho's side, but was closely followed by Hamilton's 10 Dauntlesses and the Lexington's torpedo squadron. Under such a concentrated attack, the

Shoho stood little chance: soon she was on fire and dead in the water and sank soon after. Only 6 American aircraft were lost in the attack. Back on the American aircraft carriers, listeners in the radio rooms heard the jubilant report from Lieutenant Commander Dixon, leading Lexington's other Dauntless squadron: "Dixon to carrier; scratch one flat-top"!

With the air groups safely landed again, Fletcher decided to call-off any further strikes against Goto, as he now knew, from intercepted radio messages, that his own position was known to Takagi - although he had not yet located the other Japanese aircraft-carriers himself. The worsening weather dissuaded him from further searches, he thus set a westerly course during the night in the anticipation that the Japanese invasion force would come through the Jomard Passage the next morning.

May 7th had been a day of serious blunders from the Japanese viewpoint, but Takagi and Hara were determined to try once more to destroy the American aircraft-carriers before the next day; Selecting the twenty seven pilots best qualified in night operations, Hara launched a strike from the *Shokaku* and *Zuikaku* just before 16 30 hours, with orders to attack Fletcher if they managed to locate him.

In fact, the gamble came near to success. Although the Japanese aircraft passed close to Task Force 17, they failed to locate owing to foul weather and poor visibility. The American combat air-patrol, vectored out by radar, intercepted and shot down 9 of Hara's precious aircraft. An hour later, some of the returning Japanese laid a course for home right over the American carriers, which they mistook for their own.

Twenty minutes later, three more attempted to join the Yorktown's landing circle, and one was shot down. Hara was to lose 11 more aircraft which 'splashed' when attempting night landings on his aircraft-carriers. Only 6 of the original 27 got back safely.

With the day's operations virtually at an end, the commanders on both sides now pondered on a surface night action. At 19 30 hours the Lexington's radar showed what appeared to be Japanese activity 30 miles to the east, but Fletcher did not receive the report until 22 00 hours, by which time he knew it might be impossible to locate Takagi's new position (at that moment the Japanese carriers were actually 95 miles to the east of Task Force 17). Fletcher rejected the idea of detaching, a cruiser/destroyer force for a night attack; as the last-quarter moon would not afford much light, and he urgently needed all the anti-aircraft protection he could get for the

next day's operations. In his own words: “The best plan seemed to be to keep our force concentrated and prepare for a battle with enemy carriers next morning”.

Inouye, meanwhile, had ordered Goto's cruisers to rendezvous east of Rossel Island and make an attack on the Allied force, though he did not specify whether the target was to be Fletcher or Grace. By midnight he had reconsidered the plan, ordered the invasion to be postponed for two days, and split Goto's cruisers up between the invasion transports and Takagi's force. Takagi, too, on receiving his pilot's reports that the American carriers were 50-60 miles away, considered a night action, but his air crews were exhausted - and he was in any case forestalled by a call for protection from the transports, which it was his basic mission to protect, and which had now lost the cover of the *Shoho.* Thus the main action was delayed yet again, although both sides expected a decision on the 8th. Everything now depended on locating the enemy as early as possible in the morning.

The first sighting of the Japanese carriers had been at 08 15 hours, by one of Lexington's scouts, the pilot reporting that Takagi was 175 miles to the north-east of Fletcher's position. Later, at 09 30 hours, Lieutenant-Commander Dixon sighted the Japanese Striking Force steaming due south in a position 25 miles north-east of the original contact, but about 45 miles north of Takagi's expected position at 09 00 hours as predicted on the strength of that contact.

The discrepancy was to cause trouble for Lexington's attack group, which by this time was airborne. Fitch had begun launching his strike between 09 00 and 09 25 hours, the Yorktown group of 24 bombers with 2 fighters, and 9 torpedo-bombers with 4 fighters, departing ten minutes before the Lexington aircraft. The dive-bombers spotted the Japanese first, at 10 30 hours, and took cloud cover to await the arrival of the Devastators. While Shokaku was engaged in launching further combat patrols, Zuikaku disappeared into a rain squall. The attack, which began at 10 57 hours, thus fell only on the Shokaku. Although the Yorktown pilots coordinated their attack well, only moderate success was achieved. The slow American torpedoes were either avoided or failed to explode, and only two bomb hits were scored on the Shokaku, one damaging the flight-deck well forward on the starboard bow and setting fire to fuel, while the other destroyed a repair compartment aft. The Shokaku, now burning, could still recover aircraft, but could no longer launch any.

Of the Lexington group, ten minutes behind, the 22 dive-bombers failed to locate the target, leaving only 11 Devastators and four reconnaissance-bombers for the attack. Once again the

torpedoes were ineffective, but the bombers scored a third hit on the Japanese aircraft-carrier. Although one hundred and eight of the vessel's crew had been killed, she had not been holed below the waterline, and her fires were soon brought under control. Most of her aircraft were transferred to the Zuihahu before Takagi detached Shokaku at 13 00 hours, with orders to proceed to Truk. Although in poor shape, she was not 'settling fast', as the American pilots had reported.

Captain Sherman, in the Lexington, had estimated that the Japanese attack on Task Force 17 would begin at about 11 00 hours, basing his deduction on Japanese radio traffic. In fact, the Yorktown and Lexington were to come under attack in the interval between the strikes of their respective air groups on the Japanese aircraft-carriers. The Japanese had begun launching at about the same time as the Americans, but their attack group of 18 torpedo-bombers, 33 bombers, and 18 fighters was larger, better balanced, and more accurately directed to the target. Although the American radar picked them up 70 miles away, Fitch had far too few fighters to intercept successfully, and was forced to rely mainly on his anti-aircraft gunners for protection.

At 11 18 hours the battle 'busted out', as one American sailor described it. The Yorktown, with a smaller turning circle than the Lexington, successfully avoided 8 torpedoes launched on her port quarter. Five minutes later she came under dive-bomber attack but, skilfully handled by Captain Buckmaster, escaped unscathed until 11 27 hours when she received her only hit from an 800 pound bomb which penetrated to the fourth deck, but did not impair flight operations. During this time, the evasive manoeuvres gradually drew the American aircraft carriers apart and, although the screening vessels divided fairly evenly between them, the breaking of their defensive circle contributed to Japanese success.

The Lexington, larger than the Yorktown, had a turning circle of 1 500 to 2 000 yards in diameter, compared with the 1 000-yard tactical diameter of her consort. Moreover, she had the misfortune to suffer an 'anvil' attack from the Japanese torpedo-bombers, which came in on both bows to launch their missiles at the 'Lady Lex'. Despite valiant manoeuvres by Sherman, she received one torpedo hit on the port side forward at 11 20 hours, quickly followed by a second opposite the bridge. At the same time a divebombing attack commenced from 17 000 feet, the Lexington receiving two hits from small bombs. One exploded in a ready-ammunition box on the port side, while the other hit the smokestack structure. To add to the din of battle, the

ship's siren jammed as a result of an explosion and shrieked weirdly throughout most of the attack.

Some 19 minutes later, the aircraft-carrier battle was, to all intents and purposes, at an end. At this point, honours were more or less equal, but for the Americans the real tragedy was still to come. At first it appeared that the doughty Lexington had survived to 'fight another day'. A list of 7 degrees caused by the torpedo hits was corrected by shifting oil ballast, while her engines remained unharmed. To her returning pilots she did not appear to be seriously damaged, and the recovery of the air group went ahead. At about 12 40 hours, Commander 'Pop' Healy, the damage control officer, reported to Captain Sherman: “We've got the torpedo damage temporarily shored up, the fires out, and soon will have the ship back on an even keel. But I would suggest, sir, that if you have to take any more torpedoes, you take 'em on the starboard side”.

Minutes later, at 12 47 hours, a tremendous internal explosion, caused by the ignition of fuel vapours by a motor generator which had been left running, shook the whole ship. Although the Lexington continued landing her planes, a series of further violent explosions seriously disrupted internal communications. Yet another major detonation occurred at 14 45 hours, and the fires soon passed beyond control. Despite the fact that the destroyer Morris came alongside to help fight the blaze, while Yorktown recovered all aircraft still airborne, the need for evacuation became increasingly apparent.

At 16 30 hours the Lexington had come to a dead stop, and all hands prepared to abandon ship. At 17 10 hours Fitch called to Sherman to “get the men off”, the Minneapolis, Hammann, Morris, and Anderson assisting with the rescue operations. Evacuation was orderly even the ship's dog being rescued, and Sherman was the last to leave the aircraft-carrier, sliding down a line over the stern. At 19 56 hours the destroyer Phelps was ordered to deliver the 'coup de grace' with 5 torpedoes, and the Lexington sank at 20 00 hours, a final explosion occurring as she slipped beneath the waves.

The Yorktown had been luckier. Her fires were soon brought under control and at no time was her operational efficiency seriously impaired. But the elated Japanese pilots had seen her burning furiously and reported that both she and the Lexington had been sunk. The Shokaku, badly damaged by fire, was unable to recover her aircraft. She limped back to Japan with so much water on board that she nearly capsized in a gale. Her sister ship Zuikaku also needed attention for minor defects and so the two best Japanese carriers were out of action for some time.

The Battle of the Coral Sea was now over. The Japanese pilots had reported sinking both American aircraft-carriers, and Hara's acceptance of this evaluation influenced Takagi's decision to detach the Shokaku for repairs, as well as Inouye's order that the Striking Force should be withdrawn. Even though he thought that both American aircraft-carriers had been destroyed, the cautious Inouye still deemed it necessary to postpone the invasion, apparently because he felt unable to protect the landing units against Allied land-based aircraft. Yamamoto did not agree with this decision and, countermanded the order, detailing Takagi to locate and annihilate the remaining American ships. But, by the time Takagi made his search to the south and east, Fletcher was out of reach.

Tactically, the battle had been a victory for the Japanese. Although they had lost 43 aircraft as against 33 lost by the Americans, and Hara had been left with only 9 operational aircraft after the Zuikaku had proved unable to take on all Shokaku's aircraft. Their air strikes had achieved greater results. The sinking of the Lexington, Neosho, and Sims far outweighed the loss of the Shoho and the various minor craft sunk at Tulagi.

Strategically, however, Coral Sea was an American victory: the whole object of the Japanese operationthe capture of Port Moresby-had been thwarted. Despite the occupation of Tulagi, later won back by the US Marines at a heavy price, the Japanese had gained very little of their initial objectives. Moreover, the damage to the Shokaku, and the need to re-form the battered air groups of the Zuikaku, was to keep both these carriers out of the Midway battle, where their presence might have been decisive.

Nimitz ordered Fletcher to return Yorktown to Pearl Harbor as soon as possible after refuelling. In the meantime, having heard nothing from Fletcher, Grace deduced that TF 17 had departed the area. On 10th May, hearing no further reports of Japanese ships advancing towards Port Moresby, Grace turned towards Australia and arrived at Townsville on 11th May.

The battle was the first naval engagement in history in which the participating ships never sighted or fired directly at each other. Instead, manned aircraft acted as the offensive artillery for the ships involved. Thus, the respective commanders were participating in a new type of warfare, carrier-versus-carrier, with which neither had any experience. The commanders 'had to contend with uncertain and poor communications in situations in which the area of battle had grown far beyond that prescribed by past experience but in which speeds had increased to an even greater extent, thereby compressing decision-making time'. Because of the greater speed with which decisions were required, the Japanese were at a disadvantage as Inoue was too far away at Rabaul to effectively direct his naval forces, in contrast to Fletcher who was on-scene with his carriers. The Japanese admirals involved were often slow to communicate important information to each other.

The experienced Japanese carrier aircrews performed better than those of the US, achieving greater results with an equivalent number of aircraft. The Japanese attack on the American carriers was better coordinated than the U.S. attack on the Japanese carriers. The Japanese suffered much higher losses to their carrier aircrews, however, losing ninety aircrew killed in the battle compared with thirty-five for the Americans. Japan's core of highly skilled carrier aircrews with which it began the war were, in effect, irreplaceable because of a limitation in its training programs and the absence of a pool of experienced reserves or advanced training programs for new airmen. Coral Sea started a trend which would result in the irreparable attrition of Japan's veteran carrier aircrews by the end of October 1942.

While the Americans did not perform as expected, they did learn from their mistakes in the battle and made improvements to their carrier tactics and equipment, including fighter tactics, strike coordination, torpedo bombers, and defensive strategies, such as anti-aircraft artillery, which contributed to better results in later battles. Radar gave the Americans a limited advantage in this battle, but its value to the US Navy would increase over time as the technology improved and the Allies learned how to employ it more effectively. Following the loss of Lexington, improved methods for containing aviation fuel and better damage control procedures were implemented by the Americans. Coordination between the Allied land based air forces and the U.S. Navy was poor during this battle, but this too would improve over time.

Japanese and US carriers would face off against each other again in the battles of Midway, the Eastern Solomons, and the Santa Cruz Islands in 1942, and the Philippine Sea in 1944. Each of these battles was strategically significant, to varying degrees, in deciding the course and ultimate outcome of the Pacific War. Both sides publicly claimed victory after the battle. In terms of ships lost, the Japanese won a tactical victory by sinking an American fleet carrier, an oiler, and a destroyer (42,497 tons) – versus a light carrier, a destroyer, and several smaller warships (19,000 tons) – sunk by the Americans. Lexington represented, at that time, 25% of U.S. carrier strength in the Pacific. The Japanese public was informed of the victory with overstatement of the American damage and understatement of their own.

In strategic terms, however, the Allies won because the seaborne invasion of Port Moresby was averted, lessening the threat to the supply lines between the U.S. and Australia. The battle marked the first time that a Japanese invasion force was turned back without achieving its objective, which greatly lifted the morale of the Allies after a series of defeats by the Japanese during the initial six months of the Pacific Theatre. Port Moresby was vital to Allied strategy and its garrison would most likely have been overwhelmed by the Japanese invasion troops. The Navy, however, also exaggerated the damage it inflicted, which was to cause the press to treat its reports of Midway with more caution.

The Coral Sea marks the high-water mark of Japanese naval aviation, the last in that chain of success which had started just five months before at Pearl Harbor. The results of the battle had a substantial effect on the strategic planning of both sides. For the Japanese, the battle was seen as merely a temporary setback. The results of the battle confirmed the low opinion held by the Japanese of American fighting capability and supported their belief that future carrier operations against the U.S. were assured of success.

One of the most significant effects of the Coral Sea battle was the loss of Shōkaku and Zuikaku to Yamamoto for his planned showdown with the American carriers at Midway (Shōhō was to have been employed at Midway in a tactical role supporting the Japanese invasion ground forces). The Japanese believed that they sank two carriers in the Coral Sea, but this still left at least two more U.S. Navy carriers, Enterprise and Hornet, which could help defend Midway. The aircraft complement of the American carriers was larger than that of their Japanese counterparts, which, when combined with the land-based aircraft at Midway, meant that the Combined Fleet no longer enjoyed a significant numerical aircraft superiority over the Americans for the impending battle. In fact, the Americans would have three carriers to oppose

Yamamoto at Midway, because Yorktown remained operational despite the damage from Coral Sea, and the U.S. Navy was able to patch her up sufficiently at Pearl Harbor between 27th and 30th May to allow participation in the battle. Fleet at Midway. Shōkaku herself was unable to conduct further aircraft operations, with her flight deck heavily damaged, and she required almost three months of repair in Japan.

In contrast to the strenuous efforts by the Americans to employ the maximum forces available for Midway, the Japanese apparently did not even consider trying to include Zuikaku in the operation. No effort appears to have been made to combine the surviving Shōkaku aircrews with Zuikaku's air groups or to quickly provide Zuikaku with replacement aircraft so she could participate with the rest of the Combined

Historians believe Yamamoto made a significant strategic error in his decision to support MO with strategic assets. Since Yamamoto had decided the decisive battle with the Americans was to take place at Midway, he should not have diverted any of his important assets, especially fleet carriers, to a secondary operation like MO. If either operation was important enough to commit fleet carriers, then all of the Japanese carriers should have been committed to each in order to ensure success. By committing crucial assets to MO, Yamamoto made the more important Midway operation dependent on the secondary operation's success. Moreover, Yamamoto apparently missed the other implications of the Coral Sea battle: the unexpected appearance of American carriers in exactly the right place and time to effectively contest the Japanese, and U.S. Navy carrier aircrews demonstrating sufficient skill and determination to do significant damage to the Japanese carrier forces.

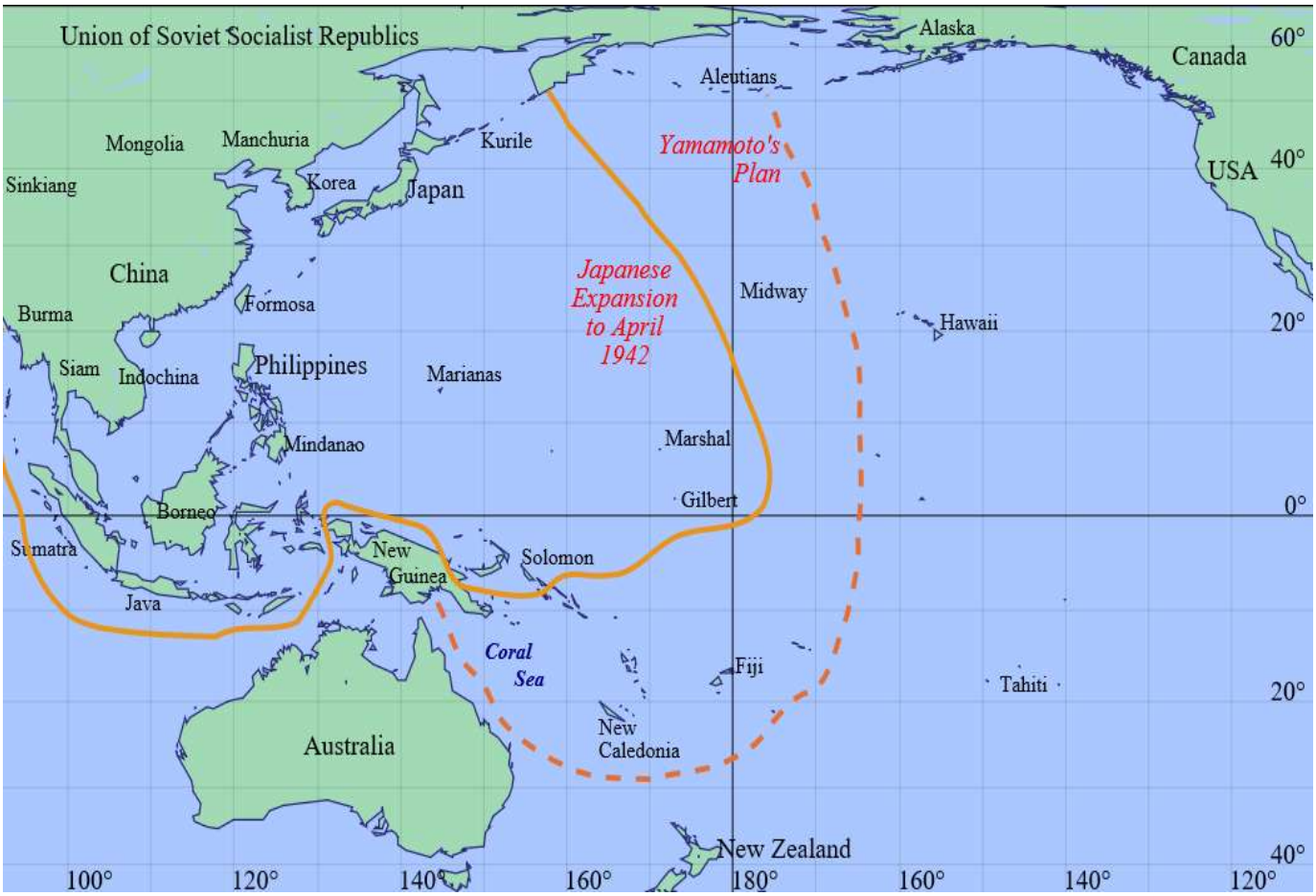
The Australians and U.S. forces in Australia were initially disappointed with the outcome of the Battle of the Coral Sea, fearing the MO operation was the precursor to an invasion of the Australian mainland and the setback to Japan was only temporary. In a meeting held in late May, the Australian AdvisoryWar Councilscribed the battle's result as ‘rather disappointing’ given that the Allies had advance notice of Japanese intentions. General MacArthur provided Australian Prime Minister John Curtin with his assessment of the battle, stating that "all the elements that have produced disaster in the Western Pacific since the beginning of the war" were still present as Japanese forces could strike anywhere if supported by major elements of the IJN.

Though the Coral Sea engagement was full of errors by the commanders on both sides, the Americans did take its lessons to heart. The ratio of fighters to bombers and torpedo-bombers was increased, and improvements were made in the organisation of attacks in the weeks that remained before the next great naval clash. But the really significant feature of the Coral Sea battle was that it opened a new chapter in the annals of naval warfare: the first ever 'carrier-against-carrier' action in which all losses were inflicted by air action.

Because the Japanese were unable to support another attempt to invade Port Moresby from the sea, forcing Japan to try to take Port Moresby by land. Japan began its land offensive towards Port Moresby along the Kokoda Track on 21st July. By then, the Allies reinforced New Guinea with additional troops (primarily Australian). The added forces slowed, then eventually halted the Japanese advance towards Port Moresby in September 1942.

The stage for Midway was now set!

CHAPTER TEN



BATTLE of MIDWAY

On Wednesday 20th May, 1942, Allied listening stations around the Pacific picked up a lengthy coded radio signal from Admiral Yamamoto to his fleet. The message was relayed to Pearl Harbour and deciphered by the US Combat Intelligence Unit ('Hypo'). It revealed that the Imperial Japanese Navy was about to mount a powerful attack on the tiny mid-Pacific atoll of Midway, 1 100 miles north-west of Pearl Harbour. This was to coincide with a diversionary attack on the Aleutians, far to the north. Soon, using other intercepted messages, 'Hypo'

intelligence officers were able to add dates and times to the places: Dutch Harbour in the Aleutians would be hit on June 3rd, Midway the next day.

How was it possible for the Americans to pinpoint Midway as the main objective? It was the culmination of a remarkable intelligence exercise. 'Hypo' had warned early in the year that a strike somewhere in the Hawaiian Islands was on the cards. On May 12th, four days after the Battle of the Coral Sea, they discovered the Japanese code name of the target: 'AF'. But where was 'AF'? The evidence pointed to Midway, but it was not conclusive.

An officer at 'Hypo', Captain Jasper Holmes, then suggested a way to check. The US air base on Midway was ordered to send an uncoded radio signal that the island was having trouble with its water distillation plant, Soon afterwards the Japanese were signalling that 'AF' had water problems. The Americans now knew for certain where the Japanese blow would fall.

The C-in-C Pacific, Admiral Chester Nimitz, was now aware, from deciphering of enemy signals, that the Japanese fleet was intent on throwing down a challenge, which, in spite of local American inferiority, had to be accepted. The proceeding Battle of Midway ranks among one of the truly decisive battles in history. In one massive five minute action, Japan's overwhelming superiority in naval air strength in the vast Pacific Ocean was wiped out.

More than half the Japanese fleet-carrier strength, together with their irreplaceable, elite, highly trained and experienced aircrews were eliminated; resulting in the Japanese naval air arm being thrown on the defensive from then on. The early run of victories which Yamamoto had predicted had come to a premature end. Now a period of stalemate was to begin, during which American industrial muscle would overpower their Pacific enemy, which Yamamoto had also foreseen.

On 26th May 1942, the aircraft-carriers Enterprise and Hornet of Task Force (TF) 16 had steamed into Pearl Harbour, to set about, in haste, the various operations of refuelling and replenishing. The next day the Yorktown with blackened sides and twisted decks, bearing the scars of her bomb-damage in the Coral Sea battle, berthed in the dry dock. Yorktown had been so badly damaged that the Japanese believed it was sunk, and thus, they would face only two American carriers.

One thousand four hundred workmen swarmed aboard to begin repairs. Under normal circumstances, two months of work would have been necessary for maintenance. But, with the knowledge that the Japanese were heading for Midway, Nimitz ordered the Navy Yard to make

emergency repairs in the utmost speed. Work was to continue, night and day, without ceasing, until the ship was at least temporarily battle worthy. The men of the dockyards completed this in less than 46 hours.

Therefore, on 28th May, TF 16, consisting of the *Enterprise* flying the flag of Rear Admiral Raymond Spruance with the Hornet, six cruisers, nine destroyers, and two replenishment tankers following, left Pearl Harbour. The next day the *Yorktown,* as TF 17 left harbour under the command of Rear Admiral Fletcher, accompanied by two cruisers and five destroyers headed to rendezvous with TF 16, three hundred and fifty miles north-east of Midway.

The Americans had been forced to make changes in their command structure. Rear-Admiral Fletcher continued to fly his flag in the *Yorktown* as commander of TF 17, but Halsey had fallen ill and the command of TF 16 passed to Rear-Admiral Spruance. Although not an aviator Spruance had commanded the screen under Halsey and backed up by Halsey's highly competent air staff he was to prove an able task force commander.

The main objective of the Japanese was to extend Japan's newly conquered eastern sea frontier so that sufficient warning might be obtained of any threatened naval air attack on the homeland. Doubts on the wisdom of the Japanese plan had been voiced in various quarters; but Yamamoto, the dynamic C-in-C of the Combined Fleet, had fiercely advocated it. He had always been certain that only by destroying the American fleet could Japan gain the breathing space required to consolidate her conquests. A belief which had inspired the attack on Pearl Harbor. Yamamoto, believed rightly, that an attack on Midway was a challenge that Nimitz could not ignore. It would bring out the US Pacific Carrier Fleet where Yamamoto, with superior strength, would be waiting to bring it to action.

While the Japanese leaders, after a string of dazzling victories, were debating where they should strike next, their minds had been made up for them. Lt. Colonel James Doolittle's raid on Tokyo with B-25 bombers, on 18th April, had put the sacred person of the Emperor in danger. The mortified generals and admirals decided that every gap in Japan's defensive perimeter must be plugged and Midway was such a gap.

Between 25/27th May, the Japanese Northern Force sailed from Honshu for the attack on the Aleutians under the command of Rear Admiral Kakuta. This was expected to induce Nimitz to send at least part of his fleet racing north. But Nimitz, being forewarned, refused to rise to the bait.

Yamamoto believed that the capture of Midway would pose a serious threat to Pearl Harbour. His opposite number, Admiral Nimitz, would then have to try to retake Midway. Waiting for him would be the powerful Japanese fleet. Yamamoto would spring the trap, and achieve what had eluded him at Pearl Harbour; the destruction of American naval power in the Pacific. With the western seaboard of the USA now at the mercy of the Japanese, President Roosevelt would have no alternative but to sue for peace, or so the argument ran.

Yamamoto committed almost the entire Japanese fleet to his plan; some 160 warships, including eight aircraft carriers, and more than 400 carrier based aircraft, compared with the three carriers, about 70 other warships and 233 carrier aircraft (plus another 115 planes stationed on Midway) at Nimitz's disposal. But Yamamoto separated his forces into five main groups, all too far apart to support or reinforce each other.

The original plan had called for the inclusion of the *Zuikaku* and *Shokaku* in Nagumo's force. But, both had suffered damage in the Coral Sea battle and could not be repaired in time to take part. Both carriers had also lost many experienced aircrews and few replacements were available.

Leading the attack was the First Carrier Striking Force under Vice Admiral Nagumo, with four carriers; *Akagi, Kaga, Hiryu* and *Soryu* with 225 aircraft on board. They were to deliver a powerful preliminary bombardment of Midway before the five thousand strong invasion force landed from 12 transport vessels. Apart from its immediate escort, the invasion force was to be protected by two support groups, each 50 to 75 miles away. Over 600 miles astern of Nagumo was the main Japanese battle fleet with seven battleships, led by Yamamoto's colossal new flagship, the 70 000 tonne *Yamato.* These, Yamamoto planned, would finish off the US fleet after the carriers had inflicted the decisive damage.

A worse feature of the Japanese organisation, was the fact that they were so loosely co-ordinated and quite unable to support each other within the narrow time limits available. Thus everything was decided on 4th June, between Vice Admiral Nagumo's four aircraft-carriers and Rear Admirals Fletcher and Spruance's three. On the decisive day the battleships, cruisers, and destroyers never fired a shot and the 41planes on board the light aircraft-carriers *Zuiho* and *Hosho* took no part in the action.

The Midway strike had all the hallmarks of Japanese planning. It was over complex, made unjustified assumptions about how the enemy would react, and failed to concentrate force. Even so, it might well have worked had American intelligence failed.

This is not to say that Yamamoto's logic was completely at fault; the bombardment of Midway on 4th June, and the planned assault on the atoll next day would compel Nimitz to send his carriers out to sea, calculated by the Japanese to take place on 7th or 8th June. This would give Nagumo time to recover his freedom of action and the Japanese C-in-C to draw in his scattered forces. To leave nothing to chance, on 2nd June, two squadrons of submarines were to station themselves along all the routes the Americans might take on their way to assist Midway. Logical this might have been, but the vital defect was that it depended on the enemy doing exactly what is expected. If he is astute enough to do something different, in this case to have fast carriers on the spot, the operation is thrown into confusion. But Yamamoto had no idea that the enemy was reading his mail.

The Japanese plan was, as their naval strategic plans customarily were, calling for exact timing at the crucial moment; and it involved, also typically, the offering of a decoy or diversion to lure the enemy into dividing his force or expending his strength on a minor objective.

Yamamoto, with the Main Body, was to take up a central position from which he could proceed to annihilate whatever enemy force Nimitz sent out. To ensure that the dispatch of any such American force should not go undetected, Pearl Harbour was to be reconnoitred between 31st May and 3rd June, by 2 Japanese flying-boats, refuelled from a submarine. This was a further precaution to the two cordons of submarines already in position by 2nd June, with a third cordon farther north towards the Aleutians.

Yamamoto's plan had two fatal defects. For all his enthusiasm for naval aviation, he had not yet appreciated that the day of the monstrous capital ship as the queen of battles had passed in favour of the aircraft-carrier which could deliver its blows at a range 30 times greater than that of the biggest guns. The role of the battleship was now as an escort to the vulnerable aircraft-carriers, supplying the defensive anti-aircraft gun power the latter lacked. Nagumo's force was supported only by two battleships and three cruisers. Had Yamamoto's Main Body kept company with it, the events that were to follow might have been very different.

Far more fatal to Yamamoto's plan, however, was his assumption that it was shrouded from the enemy, and that only when news reached the Americans that Midway was being attacked would

they order their carriers out of Pearl Harbour. Thus long before the scheduled flying-boat reconnaissance, and before the scouting submarines had reached their stations, Spruance and Fletcher, unknown to the Japanese, were beyond the patrol lines and poised waiting for the Japanese at Midway.

As a result the Japanese had no news from that source and, to make matters worse, this was the last chance that the Japanese had of finding out the strength of the Americans and they remained convinced that only two carriers were operational in the Pacific. The most important piece of information which eluded the Japanese was the fact that the *Yorktown* was not only afloat but in fighting trim.

Nimitz also had a squadron of battleships under his command, but he had no illusions that, with their insufficient speed to keep up with the aircraft-carriers, their great guns could not play any useful part in the events to follow. They were therefore relegated to defensive duties on the American west coast. For the next few days the Japanese Combined Fleet advanced eastwards according to schedule in its widespread, multipronged formation. Everywhere a buoyant feeling of confidence showed itself, generated by the memories of the unbroken succession of Japanese victories since the beginning of the war. In the 1st Carrier Striking Force, so recently returned home after its meteoric career of destruction from Pearl Harbour, through the East Indies, and on to Ceylon without the loss of a ship. The 'Victory Disease' as it was subsequently to be called by the Japanese themselves, was particularly prevalent.

Spruance and Fletcher had meanwhile rendezvoused during 2nd June, and Fletcher assumed command of the two task forces, though they continued to manoeuvre as separate units. The sea was calm under a blue sky split up by towering cumulus clouds. The scouting aircraft, flown off during the following day in perfect visibility, sighted nothing, and Fletcher was able to feel confident that the approaching enemy was unaware of his presence north-east of Midway. Indeed, neither Yamamoto nor Nagumo, pressing forward blindly through rain and fog, gave serious thought to such an apparently remote possibility.

On 3rd June at 09 00 hours, when the first enemy sighting reports reached them, Fletcher and Spruance were in a good position to act against the enemy when he attacked the atoll. On leaving Pearl Harbour they had received the following warning from Cincpac in anticipation of the enemy's superior strength: "You will be governed by the principle of calculated risk, which you shall interpret to mean the avoidance of exposure of your force to attack by superior enemy

forces without good prospect of inflicting, as a result of such exposure, greater damage on the enemy".

That Fletcher and Spruance were able to carry out these orders successfully was 'due primarily to their skilful exploitation of intelligence, which enabled them to turn the element of surprise against the Japanese. Even so, on 1st June the Japanese admiral's flagship intercepted 180 messages from Hawaii; 72 of which were classified 'urgent'. This sudden intensification of radio traffic, as well as the great increase in aerial reconnaissance, could mean that the enemy forces were now at sea or about to set sail. Should Nagumo, sailing more than 600 miles ahead of the main force, be alerted? This would mean breaking the sacrosanct radio silence and Yamamoto could not bring himself to.do it, although the Americans seemed to be aware that Midway was targeted. In such a situation, it was a case of 'effectiveness comes before camouflage'.

Far to the north on 3rd June, dawn broke grey and misty over the Aleutians, Kikuta's two aircraftcarriers launched the first of two strike waves to wreak destruction among the installations and fuel tanks of Dutch Harbour. A further attack was delivered the following day, and the virtually unprotected Aleutians were occupied by the Japanese. But as Nimitz refused to let any of his forces be drawn into the skirmish, this part of Yamamoto's plan failed to have much impact on the great drama being enacted farther south.

The opening scenes of this enactment took place on 3rd June, when a scouting Catalina flying boat some 700 miles west of Midway sighted a large body of ships, steaming in two long lines with a numerous screen in arrowhead formation, which was taken to be the Japanese main fleet. The sighting report brought nine army B-17 bombers from Midway, which delivered three high-level bombing attacks and claimed to have hit two battleships or heavy cruisers and two transports. But the enemy was in reality the Midway Occupation Force of transports and tankers, and no hits were scored on them until four Catalina's from Midway discovered them again in bright moonlight in the early hours of 4th June, and succeeded in torpedoing a tanker. Damage was slight, however, and the tanker remained in formation.

More than 800 miles away to the east, Fletcher intercepted the reports of these encounters but from his detailed knowledge of the enemy's plan was able to identify the Occupation Force. Nagumo's carriers he knew, were much closer, some 400 miles to the west of him, approaching their flying-off position from the north-west. During the night, therefore, Task Forces 16 and17 steamed south-west to a position 200 miles north of Midway which would place them at dawn

within scouting range of the unsuspecting enemy. The scene was now set for what was to be a great decisive battle.

The last hour of darkness before sunrise on 4th June, saw the familiar activity in both the carrier forces of ranging-up aircraft on the flight-deck for dawn operations. Aboard the Yorktown, whose turn it was to mount the first scouting flight of the day, there were Dauntless scout dive-bombers, ten of which were launched at 04 30 hours for a search, while waiting for news from the scouting flying boats from Midway.

Reconnaissance aircraft were dispatched at the same moment from Nagumo's force. One each from the Akagi and Kaga; two seaplanes each from the cruisers Tone, and Chikuma were to search to a depth 300 miles to the east and south. The main activity in Nagumo's carriers, however, was the preparation of a striking force to attack Midway, 36 'Kate' torpedo-bombers each carrying a 1 770 pound bomb, 36 'Val' dive-bombers each with a single 550 pound bomb, and 36 Zero fighters as escort. Led by Lieutenant Tomonaga, this formidable force also took off at 04 30 hours.

By 04 45 hours all these aircraft were on their way, with one notable exception. In the cruiser Tone, one of the catapults had given trouble, and it was not until 05 00 hours that her second seaplane got away. This apparently minor dislocation of the schedule was to have catastrophic consequences. Meanwhile, the carrier lifts were already hoisting up on deck an equally powerful second wave; but under the bellies of the 'Kates' were hung torpedoes, for these aircraft were to be ready to attack any enemy naval force which might be discovered by the scouts.

The major difference was that the Americans knew they were looking for carriers; the Japanese were not even certain that any American carriers could be in the vicinity. Admiral Nagumo launched 108 aircraft for the first softening up of Midway's defences, but he cautiously held back Kaga's air group in case any American ships were sighted. Fletcher took much the same precaution by launching only 10 Dauntlesses from the Yorktown to search to the north, just to make sure that the Japanese task force had not turned his flank.

The lull in proceedings which followed the dawn fly-off from both carrier forces was broken with dramatic suddenness. At 05 20 hours, aboard Nagumo's flagship Akagi, the alarm was sounded. An enemy flying boat on reconnaissance had been sighted. Zeros roared off the deck in pursuit. A deadly game of hideand-seek among the clouds developed. But the American naval fliers evaded their hunters. At 05 34 hours, Fletcher's radio office received the message

'Enemy carriers in sight', followed by another reporting many enemy aircraft heading for Midway; finally, at 06 03 hours, details were received of the position and composition of Nagumo's force, 200 miles south-west of the Yorktown. The time for action had arrived.

The Yorktown's scouting aircraft were at once recalled and while she waited to gather them in, Fletcher ordered Spruance to proceed 'south-westerly and attack enemy carriers when definitely located'. Enterprise and Hornet with their screening cruisers and destroyers turned away, increasing to 25 knots, while hooters blared for 'General Quarters' and aircrews manned their planes to warm-up ready for take-off. Meanwhile, 240 miles to the south, Midway was preparing to meet the impending attack.

Radar had picked up the approaching aerial swarm at 05 53 hours and 7 minutes later every available aircraft on the island had taken off. Bombers and flying-boats were ordered to keep clear, but Marine Corps fighters in two groups clawed their way upwards, and at 06 16 hours swooped in to the attack. But of the 26 planes, all but 6 were obsolescent Brewster Buffaloes, hopelessly outclassed by the highly manoeuvrable Zeros. Though they took their toll of Japanese bombers, they were in turn overwhelmed, 17 being shot down and 7 others damaged beyond repair. The survivors of the Japanese squadrons pressed on to drop their bombs on power plants, seaplane hangars, and oil tanks.

At the same time as the Marine fighters, 10 torpedo-bombers had also taken off from Midway, 6 of the new Grumman Avengers and 4 Army Marauders. At 07 10 hours they located and attacked the Japanese carriers; but with no fighter protection against the many Zeros sent up against them, half of them were shot down before they could reach a launching position. Those which broke through, armed with the slow and unreliable torpedoes which had earned Japanese contempt in the Coral Sea battle, failed to score any hits; greeted with a storm of gunfire, only one Avenger and two Marauders escaped to crash-land on Midway. The Japanese had damaged the US base, but its bombers were safely out of the way and the airfield was still usable. Tomonaga signalled to Nagumo that a second attack was needed to knock it out.

This put Nagumo in a quandary. He knew neither where the US fleet was nor how many ships it had. But, as ordered by Yamamoto, he had held back his best aircrews, their planes armed with torpedoes and other anti-ship weapons, in case the US carriers arrived sooner than expected. Yet his search planes had spotted no enemy ships and he needed to finish the job at Midway. Just then Midway based bombers started attacking his ships. They did no damage, but they

made up Nagumo's mind for him, and changed the course of the battle. The Japanese commander ordered his second wave torpedo bombers to be rearmed with bombs for another attack on Midway.

As no inkling of any enemy surface forces in the vicinity had yet come to him, he made the first of a train of fatal decisions. At 07 15 hours he ordered the second wave of aircraft to stand by to attack Midway. The 'Kate' bombers, concentrated in the Akagi and Kaga, had to be struck down into the hangars to have their torpedoes replaced by bombs. Ground crews swarmed round to move them one by one to the lifts which took them below where mechanics set feverishly to work to make the exchange. It could not be a quick operation, however, and it had not been half completed when, at 07 28 hours, came a message which threw Nagumo into an agony of indecision.

One of Nagumo's search planes spotted 10 US warships some 210 miles north-east of the Japanese carriers. This plane had taken off half an hour late that morning, delayed when the launching catapult on the heavy cruiser *Tone* jammed. Had it taken off on time, it might well have spotted the US ships half an hour earlier. Fated to be the one in whose search sector the American fleet was to be found; sent back the signal. 'Have sighted ten ships, apparently enemy, bearing 010 degrees, 240 miles away from Midway: Course 150 degrees,' speed more than 20 knots'. For the next quarter of an hour Nagumo waited with mounting impatience for a further signal giving the composition of the enemy force.

Only if it included carriers was it any immediate menace at its range of 200 miles, but in that case it was vital to get a strike launched against it at once. At 07 45 hours Nagumo ordered the re-arming of the 'Kates' to be suspended and all aircraft to prepare for an attack on ships, and two minutes later he signalled to the search plane: 'Ascertain ship types and maintain contact.' The response was a signal of 07 58 hours reporting only a change of the enemy's course; but 12 minutes later came the report: 'Enemy ships are 5 cruisers and 5 destroyers.

This message was received with heartfelt relief by Nagumo and his staff; for at this moment his force came under attack first by 16 Marine Corps dive-bombers from Midway, followed by 15 Flying Fortresses, bombing from 20 000 feet, and finally 11 Marine Corps Vindicator scout-bombers. Every available Zero was sent aloft to deal with them, and not a single hit was scored by the bombers. But now, should Nagumo decide to launch an air strike, it would lack escort fighters until the Zeros had been recovered, refuelled, and re-armed. While the air attacks were

in progress, further alarms occupied the attention of the battleship and cruiser screen when the US submarine Nautilus, one of 12 covering Midway fired a torpedo at a battleship at 08 25 hours. But neither this nor the massive depth-charge attacks in retaliation were effective; and in the midst of the noise and confusion of the air attacks, at 08 20 hours, Nagumo received the message he dreaded to hear: 'Enemy force accompanied by what appears to be a carrier'.

The luckless Japanese admiral's dilemma, however, had been disastrously resolved for him by the return of the survivors of Tomonaga's Midway strike at 08 30 hours. With some damaged and all short of fuel, their recovery was urgent; and rejecting the advice of his subordinate carrier squadron commander RearAdmiral Yamaguchi, in the Hiryu to launch his strike force, Nagumo issued the order to strike below all aircraft on deck and land the returning aircraft. By the time this was completed, it was 09 18 hours.

Refuelling, re-arming, and ranging-up a striking force on all four carriers began at once, the force consisting of 36 'Val' dive-bombers and 54 'Kates', now again armed with torpedoes, with an escort of as many Zeros as could be spared from defensive patrol over the carriers. Thus it was at a carrier force's most vulnerable moment that, from his screening ships to the south, Nagumo received the report of an approaching swarm of aircraft. The earlier catapult defect in the Tone; the inefficient scouting of its aircraft's crew; Nagumo's own vacillation (perhaps induced by the confusion caused by the otherwise ineffective air attacks from Midway); but above all the fatal assumption that the Midway attack would be over long before any enemy aircraft-carriers could arrive in the area, all had combined to plunge Nagumo into a catastrophic situation. The pride and vainglory of the victorious carrier force had just one more hour to run.

When Task Force 16 had turned to the south-west, leaving the Yorktown to recover her reconnaissance aircraft, Nagumo's carriers were still too far away for Spruance's aircraft to reach him and return; and if the Japanese continued to steer towards Midway, it would be nearly 09 00 hours before Spruance could launch his strike. When calculations showed that Nagumo would probably be occupied recovering his aircraft at about that time, however, Spruance had decided to accept the consequences of an earlier launching in order to catch him off balance. Every serviceable aircraft in his two carriers, with the exception of the fighters required for defensive patrol, were to be included, involving a double launching, taking a full hour to complete, during which the first aircraft off would have to orbit and wait, eating up precious fuel.

It was just 07 02 hours when the first of the 67 Dauntless dive-bombers, 29 Devastator torpedo bombers, and 20 Wildcat fighters, which formed Task Force 16's striking force, flew off. The torpedo squadrons had not yet taken the air when the sight of the Tone's float plane, circling warily on the horizon, told Spruance that he could not afford to wait for his striking force to form up before dispatching them. The Enterprise's dive-bombers led by Lieutenant-Commander McClusky, which had been the first to take off, were ordered to lead on without waiting for the torpedo-bombers or for the fighter escort whose primary task must be to protect the slow, lumbering Devastators. McClusky steered to intercept Nagumo's force which was assumed to be steering south-east towards Midway. The remainder of the air groups followed at intervals, the dive-bombers and fighters up at 19 000 feet, the torpedo-bombers skimming low over the sea.

This distance between them, in which layers of broken cloud made maintenance of contact difficult, had calamitous consequences. The fighters from the Enterprise, led by Lieutenant Gray, took station above but did not make contact with Lieutenant Commander Waldron's torpedo squadron from the Hornet, leaving the Enterprise's torpedo squadron, led by Lieutenant-Commander Lindsey; unescorted. Hornet's fighters never achieved contact with Waldron, and flew instead in company with their dive-bombers. Thus Task Force 16's air strike advanced in four separate, independent groups, McClusky's dive-bombers, the Hornet's dive-bombers and fighters, and the two torpedo squadrons.

All steered initially for the estimated position of Nagumo, assuming he had maintained his south-easterly course for Midway. In fact, at 09 18 hours, having recovered Tomonaga's Midway striking force, he had altered course to north-east to close the distance between him and the enemy while his projected strike was being ranged up on deck. When the four air groups from TF 16 found nothing at the expected point of interception, they had various courses of action to choose between. The Hornet's dive-bombers decided to search south-easterly where, of course, they found nothing. As fuel ran low, some of the bombers returned to the carrier, others made for Midway to refuel. The fighters were not so lucky: one by one they were forced to ditch as their engines spluttered and died.

The two torpedo squadrons, on the other hand, low down over the water, sighted smoke on the northern horizon and, turning towards it, were rewarded with the sight of the Japanese carriers shortly after 09 30 hours. Though bereft of fighter protection, both promptly headed in to the attack. Neither Waldron nor Lindsey had any doubts of the suicidal nature of the task ahead of

them. The former, in his last message to his squadron, had written: “My greatest hope is that we encounter a favourable tactical situation, but if we don't, and the worst comes to the worst, I want each of us to do his utmost to destroy the enemy. If there is only one plane left to make a final run in, I want that man to go in and get a hit. May God be with us all”.

His hopes for a favourable tactical situation were doomed. Fifty or more Zeros concentrated on his formation long before they reached a launching position. High overhead, Lieutenant Gray, leading the Enterprise's fighter squadron, waited for a call for help as arranged with Lindsey, thinking that Waldron's planes were the torpedo squadron from his own ship, a call which never came. From the cruisers and destroyers of the screen came a withering fire. One by one the torpedo-bombers were shot down. A few managed to get their torpedoes away before crashing, but none hit the enemy. Only one of the pilots, Ensign George Gay, survived the massacre, clinging to a rubber seat cushion which floated away from his smashed aircraft, until dusk when he could inflate his life-raft without attracting strafing Zeros.

Five minutes later it was the turn of Lindsey's 14 Devastators from the Enterprise. Purely by chance, as he was making his attack on the starboard side of the Kaga, the torpedo squadron from the Yorktown came sweeping in from the other side, aiming to attack the Soryu, and drawing off some of the fighter opposition.

The Yorktown's strike group of 17 dive-bombers led by Lieutenant-Commander Leslie, with 12 torpedo bombers of Lieutenant-Commander Massey's squadron and an escort of 6 Wildcats, had taken departure from their carrier an hour and a quarter after the strike groups of Task Force 16. A more accurate assessment of probabilities by Leslie, however, had brought the whole of this force simultaneously over the enemy to deliver the co-ordinated, massed attack which alone could hope to swamp and break through the defences. In addition, at this same moment, McClusky's dive-bombers also arrived overhead. McClusky, after reaching the expected point of interception, had continued for a time on his south-westerly course and had then made a cast to the north-west. There he had sighted a destroyer steering north-east at high speed. This was the Arashi, which had been left behind to depth charge the Nautilus. Turning to follow her, McClusky was led straight to his objective.

The simultaneous attack by the two torpedo squadrons brought no result of itself. Scores of Zeros swarmed about them, brushing aside the puny force of six Wildcats. The massacre of the

clumsy Devastators was re-enacted. Lindsey and ten others of his force were shot down. Of Massey's squadron, only two survived. The few torpedoes launched were easily evaded.

Nevertheless, the sacrifice of the torpedo-bombers had not been in vain. For, while every Japanese fighter plane was milling about low over the water, enjoying the easy prey offered to them there, high overhead there were gathering, all unseen and unmolested, the dive-bombers, McClusky's 18, and Leslie's 17. And now, like hawks swooping to their prey, they came plummeting down out of the sky.

In the 4 Japanese carriers the refuelling and re-arming of the strike force had been almost completed. The decks were crowded with aircraft ranged for take-off. Nagumo had given the order to launch and ships were turning into wind. Aboard the Akagi, all eyes were directed downwards at the flight-deck.

The Zero fighters were so busy tracking down Waldron's planes at low level that they were too late to prevent an attack by Douglas SBD Dauntlesses, which dive-bombed the Japanese aircraft-carriers from a height of nearly 20 000 feet. On the carriers themselves, the Japanese were too busy warding off torpedoes to see the second attack. Suddenly, over the rumbling roar of engines, the high-pitched rising scream of dive-bombers was heard. Even as faces swivelled upwards at the sound, the black dots which were 1 000 pound bombs were seen leaving three 'Hell-Divers' as they pulled out from their near-vertical dive. Fascinated eyes watched the bombs grow in size as they fell inexorably towards that most vulnerable of targets, a full deck load of armed and fuelled aircraft.

One bomb struck the Akagi squarely amidships, opposite the bridge and just behind the aircraft lift, plunged down into the hangar and there exploded, detonating stored torpedoes, tearing up the flight deck, and destroying the lift. A second exploded in the midst of the 'Kates' on the after part of the deck, starting a tremendous conflagration to add to that in the hangar. In a matter of seconds Nagumo's proud flagship had been reduced to a blazing shambles. From time to time she was further shaken by internal explosions as the flames touched off petrol tanks, bombs, and torpedoes. Within a few minutes Captain Aoki knew that the damage and fires were beyond control. He persuaded the reluctant Nagumo that it was necessary to transfer his flag to a ship with radio communication intact. Admiral and staff picked their way through the flames to reach the forecastle whence they lowered themselves down ropes to a boat which took them to the light cruiser Nagara.

Many uninjured men leapt .into the sea and swam away from the stricken, ship. Destroyers Arashi and Nowaki picked up all survivors. When the rescue work was complete, Captain Aoki radioed to Admiral Nagumo at 19 20 hours from one of the destroyers, asking permission to sink the crippled carrier. This inquiry was monitored by the combined fleet flagship, whence Admiral Yamamoto: dispatched an order at 22 25 hours to delay the carrier's disposition. Upon receipt of this instruction, the captain returned to his carrier alone. He reached the anchor deck, which was still free from fire, and there lashed himself to an anchor. When Yamamoto at last fully understood the fullness of the Japanese defeat he gave his approval and the Akagi was sent to the bottom by torpedoes from a destroyer.

Only three dive-bombers from the Enterprise had attacked the flagship. The remainder of the air group, 34 dive-bombers, all concentrated on the Kaga. Of four bombs which scored direct hits, the first burst just forward of the superstructure, blowing up a petrol truck which stood there, and the sheet of flame which swept the bridge killed everyone on it, including the captain. The other three bombs falling among the massed aircraft on the flight deck set the ship ablaze and started the same fatal train of fires and explosions as in the Akagi. Within a few minutes, the situation was so beyond control that the senior surviving officer ordered the transfer of the Emperor's portrait to an attendant destroyer, the custom obligatory when a ship was known to be doomed, and conducted with strict naval ceremony. The Kaga was to survive for several hours, nevertheless.

Simultaneously, with the Akagi and Kaga, the Soryu had also been reeling under a devastating attack. Leslie of the Yorktown was leading veterans of the Coral Sea battle, probably the most battle experienced aviators in the American navy at that time. With deadly efficiency they dived in three waves in quick succession from the starboard bow, the starboard quarter, and the port quarter, released their bombs and climbed away without a single casualty. Out of the shower of 1 000-pound bombs, three hit. The first penetrated to the hangar deck and the explosion lifted the steel platform of the lift, folding it back against the bridge. The others landed among the massed aircraft, causing the whole ship to be engulfed in flames. It took Captain Yanaginoto only 20 minutes to decide to order 'Abandon Ship' to save his crew from being burnt alive, though the Soryu, like her sisters, was to survive for some hours yet.

When Captain Yanaginoto gave the order 'Abandon Ship', he determined to immolate himself, dying in the flames or going down with her. A party of his men returning on board with the intention of persuading him or, if necessary, of forcing him to save himself, fell back abashed at

the heroic, determined figure of their captain, standing sword in hand, facing forward, awaiting his end. They left him to his chosen fate. As they did so they heard him singing the Japanese national anthem. Yanaginoto's resolution held fast till 19 13 hours when at last the Soryu and the bodies of seven hundred and eighteen of her crew slid beneath the surface.

Thus, in five brief, searing minutes, half of Japan's entire fleet carrier force; her naval corps d'elite, had been shattered. For the time being the Hiryu, some miles away, remained untouched. She was to avenge her sisters in some measure before the day was over; but before going on to tell of her part in the battle let us follow the remainder to their deaths in the blue Pacific waters.

Much had taken place in the meantime before Nagumo's three aircraft-carriers suffered their death throes.

The first survivors of the American strike groups to land back on their ships made it clear that one Japanese carrier had not yet been located. This was the Hiryu which, at the time of the attack, had become separated from the remainder. Admiral Fletcher therefore launched a ten-plane search from the Yorktown, and sent up a defensive patrol of a dozen Wildcats. It was none too soon. At a few minutes before noon, the Yorktown's radar gave the warning of enemy planes coming in from the west.

These were the Hiryu's attack group of 18 dive-bombers and 6 fighters, led by Lieutenant Kobayashi, a veteran leader who had taken part in every operation of the Nagumo force. As soon as they had flownoff, a further strike of 10 torpedo-bombers and 6 Zeros, to be led by the redoubtable Tomonago, was ranged-up. Kobayashi's force had followed some of the Yorktown's attack planes back and now concentrated on Fletcher's flagship. Wildcats, for once outnumbering the escorting Zeros, broke through to get at the 'Vals', shooting down 10 of them, including the leader. Of the 8 which remained, 2 were knocked down by anti-aircraft fire from the cruiser screen.

The six survivors, however, showed that they had lost none of their skill as they screamed down on the carrier. One 'Val' broke up under anti-aircraft fire, but its bomb sped on to burst on the flight-deck, killing many men, and starting a hangar fire below. A second bomb plunged through the side of the funnel and burst inside, starting more fires. With 3 boiler uptakes smashed and the furnaces of 5 or 6 boilers extinguished, the carrier's speed fell away until, 20 minutes later,

she came to a stop. A third bomb penetrated to the fourth deck where for a time a fire threatened the forward petrol tanks and magazines.

His flagship immobilised, her radio and radar knocked out, Admiral Fletcher transferred his flag to the cruiser Astoria, and ordered the Portland to take the aircraft-carrier in tow. The damage-control organization worked wonders. Before the towline had been passed, the Yorktown was under way again and working up to 20 knots, and the refuelling of the fighters was in progress. Prospects seemed bright. Then a cruiser's radar picked up Tomonaga's air group, 40 miles away and coming in fast. There was just time to launch 8 of the refuelling Wildcats to join the 4 already in the air, but they were unable to get through the screen of fighters to get at the 'Kates', though they shot down 3 of the 'Zeros'. A tremendous screen of bursting shells spread itself in front of the attackers, while the cruisers raised a barrage of splashes with their main armament, a wall of water columns through which it seemed impossible that the skimming 'Kates' could fly.

Five 'Kates' were shot down, but the remainder, coming in from four different angles, displayed all their deadly skill, boring doggedly in to drop their torpedoes at the point-blank range of 500 yards. It was impossible for the carrier to avoid them all. Two hit on her port side, tearing open the double bottom fuel tanks and causing flooding which soon had her listing at 26 degrees. All power was lost, so that counter flooding was impossible. It seemed that the Yorktown was about to capsize. At 15 00 hours, Captain Buckmaster ordered· 'Abandon Ship'.

Meanwhile, however, the dive-bombers from Spruance's Task Force 16, operating some 60 miles to the north-east of the Yorktown, had wreaked vengeance on the Hiryu. Twenty-four Dauntlesses, of which 10 had been transferred from the Yorktown, arrived overhead undetected soon after the few survivors of Hiryu's attack had been recovered. The aircraft-carrier circled and swerved to avoid the bombs from the plummeting dive-bombers, but in vain. Four of them hit, one of which blew the forward lift bodily on to the bridge. The others started the inevitable fires and explosions, and the same prolonged death agonies as the Hiryu's sisters were still suffering. By 21 23 hours she had come to a stop. Desperate efforts to subdue the flames went on through the night; but at 02 30 hours the following morning she was abandoned to be torpedoed by her attendant destroyers.

When the night of 4th June closed over the 4 smoking Japanese carriers and over the crippled Yorktown, the Battle of Midway was, in the main, over. Neither of the opposing commanders yet knew it, however, and manoeuvres and skirmishes were to continue for two more days. The

Japanese commanders, except Nagumo, were slow to realise that the shattering of their four fleet carriers signified defeat and the end of the Midway operation. Admiral Kondo, with his 2 fast battleships, 4 heavy cruisers, and the light carrier Zuiho had set off to the help of Nagumo at midday on 4th June, and soon afterwards Yamamoto was signalling to all his scattered forces to concentrate and attack the enemy. He himself, with the main body of his fleet, was coming up fast from the west bringing the 18inch guns of the giant Yamato and the 16inch ones of the Nagato and Mutsu to throw in their weight. Still underestimating his opponent, he was dreaming of a night encounter in which his immensely powerful fleet would overwhelm the American task force and avenge the losses of the previous day. The great 'fleet action' with battleships in stately line hurling huge shells at each other was still his hope and aim.

Such a concept had been forcibly removed from American naval strategy by the disaster of Pearl Harbor. Raymond Spruance, one of the greatest admirals to come to the fore during the war, was not to be lured within range of Yamamoto's battleships, above all at night, when his carriers, at this time untrained for night-flying, would be at a tremendous disadvantage. At sunset he turned away eastwards, aiming to take up a position on the following day from which he could either 'follow up retreating enemy forces or break up a landing attack on Midway'.

The Japanese C-in-C refused to credit the completeness of the disaster that had overtaken his fleet and the Midway plan until early on 5th June when, at 02 55 hours, he ordered a general retirement. Thus, when Spruance, after prudently steering eastwards to keep his distance from the still overwhelmingly superior Japanese surface fleet, and reversing course at midnight so as to be within supporting distance of Midway at daylight, sent a strike of 58 dive-bombers from his two ships during the afternoon of the 5th to seek out Yamamoto's Main Body, his airmen encountered nothing but a lone destroyer sent to search for the Hiryu.

Two final incidents remain to be briefly recounted. When Yamamoto ordered his general retirement, the squadron of four heavy cruisers of Admiral Kurita's Support Force, the Kumano, Suzuya, Mikuma, and Mogami, was to the westward of Midway, steering through the night to deliver a bombardment at dawn. They now swung round to reverse course full in view of the American submarine Tambor. As they steadied on their retirement course, the Tambor was sighted in the moonlight ahead. The signal for an emergency turn to port was flashed down the line but was not taken in by the rear ship, Mogami. Failing to turn with the remainder she collided with the Mikuma, suffering serious damage which reduced her speed to 12 knots. Leaving the Mikuma and two destroyers to escort the cripple.

News of this attractive target soon reached Midway. Twelve army Flying Fortresses took off but were unable to locate it; but 12 Marine Corps dive-bombers sighted the long oil slick being trailed by the Mikuma, followed it up, and at 08 05 hours dived to the attack. Their bombs failed to achieve direct hits, but the plane of Captain Richard Fleming crashed on the after turret of the Mikuma. Petrol fumes were sucked down into the cruiser's starboard engine-room and exploded, killing the whole engine room crew.

The two cruisers nevertheless continued to limp slowly away, until the following day when Spruance, having abandoned hope of delivering another blow on Yamamoto's Main Fleet, was able to direct his dive-bombers on to them. The Mikuma was smothered and sunk, but the Mogami amazingly survived, heavily damaged, to reach the Japanese base at Truk.

While these events were taking place, far to the east the abandoned Yorktown had drifted crewless through the night of 4/5th June. She was still afloat at noon the next day and it became clear she had been prematurely abandoned. A salvage party boarded her and she was taken in tow. Hopes of getting her to port were high until the Japanese submarine 1-168, sent by Yamamoto for the purpose, found her, penetrated her anti-submarine screen, and put 2 torpedoes into her. At 06 00 hours on 7th June the Yorktown sank at last.

It has been said that Rear Admiral Spruance had calculated the time so as to surprise the enemy aircraft carriers just when their flight-decks would be cluttered up with planes returning from Midway. With admirable, almost unprecedented modesty he himself has denied the flattering legend in his preface to Commanders Fuchida's and Okumiya's book: "When I read the account of the events of 4th June 1942, I am struck once more by the part played by chance in warfare. The authors congratulate us on having chosen the moment of our attack on the Japanese aircraft-carriers when they were at their most vulnerable, that is with their flight-decks encumbered with planes ready to take off. We did not choose this moment deliberately. For my part I had only the feeling that we had to achieve surprise and strike the enemy planes with all the strength at our command as soon as we met them". It can only be said that the war leader who puts into, practice the principle enunciated by Napoleon: "Action! Action! Speed!" can never go wrong.

By attacking Midway, the Japanese hoped to lure the US Pacific Fleet into the open sea and destroy it. Instead, thanks to superb US intelligence and Japanese mistakes, the attack marked the end of Tokyo's supremacy in the Pacific Ocean. This was the end of a most decisive battle,

the effects of which were felt far beyond the waters of the Pacific. It deprived Japan of her freedom of action and it allowed the two Anglo-Saxon powers to go ahead with their policy of, 'Germany first', as agreed between Churchill and Roosevelt.

As well as the ships mentioned above, the Americans lost three hundred and seven dead and 147 planes. The Japanese losses of three thousand five hundred dead and 332 planes deprived her of the cream of her naval air forces. The results show that, though they had been dealt a worse hand than the enemy, Nimitz, Fletcher, and Spruance had played their cards better than Yamamoto and Nagumo. Chance had played her part too, though. What would have happened if Tone's seaplane had not been half an hour late in taking off, we shall never know.

Midway was the first defeat ever suffered by the Japanese Navy, and news of the debacle was completely suppressed in Japan. All papers concerning the event were classified top secret and destroyed in 1945, so that the Japanese public only learned of the events at Midway in the 1950s when published accounts began to appear.

Though Yamamoto blamed the disaster on the failure of his advance screen of submarines to locate and harass the Americans, in fact the responsibility for deploying the submarines in the wrong place was his, It was also Yamamoto who divided his huge fleet and then devised for it a rigid, highly complicated battle plan that was entirely based on what he assumed the Americans would do. The Americans did not follow the script, and the Japanese commanders were not trained to adapt rapidly to radically different situations. But without the complete and accurate intelligence reports gathered by the Americans, the Japanese plan might well have succeeded. These reports, which gave Nimitz the time and the knowledge to correctly dispose his forces, were probably the crucial factor in the American victory.

The Battle of Midway was a significant moment in naval history. For the first time battleships fled before aircraft carriers. It was also a turning point in World War Two. Japan had lost its main naval striking force and the US Pacific Fleet, far from being destroyed, had won a remarkable victory despite the loss of a carrier. By the time Japan rebuilt its carrier fleet in 1944, American industrial power was fully mobilised in all the unstoppable might that Yamamoto had so feared.

The Battle of Midway marks the end of the transition period between the eras dominated by battleships and by carriers. Even more than Coral Sea, Midway demonstrated the central role of the carrier plane. Despite a fleet that remained largely intact and immeasurably superior firepower, Yamamoto was forced to retire without firing a shot once he lost his air cover.

The obvious questions arise from this Japanese debacle; why were the battleships not used for Midway off-shore bombardment and the carriers kept in readiness in the event of an American surprise attack? Why were two of the carriers not used to soften up the target and the remaining two kept in readiness for an air attack?

Midway saw the debut of the Zeke, or Zero-3 fighter plane. The original Zero had been far more manoeuvrable and had a rate of climb three times greater than its American counterparts, and the new Zero was an even greater improvement. But the Japanese pilots proved to be inferior to the Americans, an indication of the deterioration of the Japanese air arm and the growing shortage of well-trained pilots since Pearl Harbor. On the American side, the Dauntless dive bomber, which was.to become the most successful carrier plane of the war, performed superbly, while the Devastator torpedo-bomber proved so disappointing that it was replaced with the new Avenger.

The Battle of Midway did not decide the entire course of the Pacific War in a few minutes, nor did it end with the utter destruction of one of the combatants. Its importance lies in the fact that it broke Japan's naval superiority; that eventually allowed America to overwhelm Japan.

CHAPTER ELEVEN

BATTLESHIP TIRPITZ

The 52 000 ton German battleship Tirpitz when commissioned in 1941, was the largest battleship in the world, with 8 x 15" guns and a speed of 31 knots. Tirpitz was named after Admiral Tirpitz who was the driving force that made Imperial Germany's High Seas Fleet a major naval power. Bismarck was the 'Iron Chancellor' who unified Germany. Ironically, both

men represented the beginning and end of the German Empire. Bismarck created the Empire in 1871 whilst Admiral Tirpitz led it into a naval race, resulting in war with Great Britain, and eventual defeat

Following the sinking of the Bismarck after the action with Hood and Prince of Wales, Tirpitz was deployed in 1942 to Norwegian waters where she remained for the rest of her career, principally to guard against a British invasion that was Hitler's fantasy and be a constant menace to supply lines. From Norway, Tirpitz could attack Allied convoys to the Soviet Union or make a break for the Atlantic, as did Bismarck. Her presence alone, constituted a strategic threat as she was in effect a 'fleet in being'.

This concept of a 'fleet in being' occurs when a naval force is smaller than its adversary and therefore unwilling to engage in full fleet combat, but is strong enough to cause concern to the superior naval power. This is due to its capacity to emerge and disrupt sea routes or catch and overwhelm part of the superior power's naval forces.

She had a crew of two thousand five hundred men and was very similar to her sister ship Bismarck, only slightly larger. She completely outclassed the older British battleships and even the new King George V class was not so well armoured nor so fast, although they did fire a heavier broadside. If these two giant German ships, namely Bismarck and Tirpitz together with other German surface units had been allowed to roam the Atlantic, the lifeline from Canada and the USA would certainly have been cut. Churchill wrote that the destruction, or even the crippling, of these ships was top priority, and their elimination would alter the entire naval situation worldwide.

Though Tirpitz never at any stage came into contact with Allied shipping, her great power caused the Royal Navy to divert badly needed resources and generated intense efforts to put her out of action. Considerable forces had to be maintained at Scapa Flow that could be otherwise employed in vital theatres of operations. The Royal Navy attacked the battleship on a number of occasions with midget submarines plus carrier based aircraft and repeated attempts were also made by RAF Bomber Command to sink her.

Tirpitz only fired her main guns offensively once during a 1943 raid on allied shore facilities at Spitzbergen. She did, however, represent the last real Atlantic surface threat faced by the Allies. In March 1942 Tirpitz left Trondheim to attack a Russian bound convoy. She did not go undetected; the British submarine Seawolf, stationed off the coast, sighted and reported Tirpitz's

movements; resulting in the Home Fleet calling up three battleships and the aircraft carrier Victorious. German radio intelligence intercepted this information and Tirpitz was recalled. But en route to base she was attacked by torpedo aircraft from the carrier. In a furious battle lasting only eight minutes the Tirpitz escaped all the torpedoes and shot down seven of her attackers. Unscathed, she steamed back into the fjord, a lucky escape from the fierce and resolute British attack. Consequently Hitler ordered that warships were in future only to leave their anchorage when there was no danger of a British aircraft carrier being involved.

Perhaps the most powerful and tragic demonstration of the influence of this giant battleship came in the summer of 1942, when the mere threat of her being at sea was the direct cause of the dispersal and near annihilation of the ill-fated Convoy PQ-17. We will deal with this later in much more detail together with other incidents in the life and times of the Tirpitz.

In September 1943 a British midget submarine raid did cause serious damage. And in February 1944, while she was still under repair, the German battleship was the target of an unsuccessful raid by Soviet bombers. In April 1944 as her repairs were being completed, Tirpitz was attacked by British carrier based planes, receiving hits that caused major damage. Further repairs lasted until June, and she was again attacked by the Fleet Air Arm. In mid-September, she was hit with bombs dropped by RAF heavy bombers. Finally, on 12th November 1944, Tirpitz was hit by several ‘Tall Boy’ heavy bombs, causing massive damage. She listed heavily, her magazine exploded and she met her end, taking a thousand seamen with her.

Besides tying down enormous British resources, the fear of the Tirpitz breaking out to the Atlantic prompted one of the most daring raids of World War Two, the attack upon the heavily-defended French port of St. Nazaire in March 1942. For if the Tirpitz had broken out into the Atlantic, it was most likely that she would seek shelter in a base on the west coast of France, and the only dry dock capable of accommodating her was the great 'Normandie' dock at St. Nazaire. Therefore, the Admiralty decided to put this dock out of action.

The overall objective of the raid on St. Nazaire was successfully achieved, aerial reconnaissance showed that the gates of the lock were utterly demolished, and docking the Tirpitz would be impossible. Crippling the battleship itself, however, was still the chief priority, and three days after the St .Nazaire raid 33 bombers attacked the Tirpitz while it lay near Trondheim, but neither this raid, nor two more strikes scored any hits. Bad weather and an efficient smokescreen shrouded the target as it lay in the narrow fjord. The aircraft attacked in 2

waves; the first attack by high-flying Lancaster's followed by low level Halifax's. Twenty 2 ton bombs were dropped, none of which hit, and 5 bombers were shot down.

The battleship was actually extremely difficult to attack. She was secured in a narrow fjord, covered with camouflage nets and high mountains on either side. On top of this air-raid warnings set off an elaborate smoke screen system to rapidly obscure the Tirpitz. On the following night there was a repeat attack by 30 bombers which was again foiled by the German smoke screen. Bombs and mines were dropped around the obscured battleship, but again without success, for the loss of 2 bombers.

Within a month Bomber Command managed to make 3 attacks, a not inconsiderable achievement in view of the atrocious weather conditions. Twelve aircraft out of 107 were lost without inflicting any damage whatsoever. Something else was required but before an alternative could be planned the Tirpitz was to achieve her greatest indirect success.

In June 1942 Tirpitz and other German capital warships targeted convoy PQ-17 consisting of 34 merchantmen escorted by 6 destroyers and 2 cruisers. British reconnaissance aircraft sighted and reported that a German battle squadron had put to sea. This resulted in a disastrous and much debated decision by the Admiralty. First Sea Lord, Admiral Sir Dudley Pound, realising that the Home Fleet was hundreds of miles away and that the cruisers and destroyers escorting the convoy were no match for their opponents, ordered the escort to withdraw while the merchantmen were told to scatter. The unprotected merchantmen were left to attempt to reach their destination independently. German naval command intercepted these reports and ordered the battle squadron to discontinue the operation and return to base, leaving the merchantmen to be picked off by U Boats and land based aircraft.

The Tirpitz battle squadron played no part in the actual slaughter, their job was done as soon as the convoy scattered. The Admiralty panic order gave the German naval and air forces an unbelievable chance of easy plunder which they readily seized. In the next three days Allied merchant ships were sunk by bombs or torpedoes. Only 10 ships eventually reached Russia. The mere threat of the surface attack had worked; without firing a gun, and without even getting within 500 kilometres of PQ 17, Tirpitz had achieved one of the most outstanding naval successes of the war.

An attempt by the British to put the Tirpitz out of action using human torpedoes known as Chariots took place in October 1942. A Norwegian, Leif Larsen, who had escaped from Norway to Britain, was put in charge of the operation. A fishing boat was used to tow the chariots until they were close to the target. On the morning of 26th October they sailed for Norway, but on 29th October the generator to recharge the Chariots' batteries broke down.

The operation continued in the hope that the Chariot batteries were sufficiently charged. But when the Chariots got undetected to within 16 kilometres of their target, the batteries went flat. The disappointed crew scuttled the fishing boat and Chariots and made their way to Sweden. In September 1943 a German battle squadron consisting of Tirpitz, Scharnhorst and 9 destroyers attacked the Allied base on Spitzbergen. Tirpitz and Scharnhorst opened fire with their main armament and German destroyers ran inshore with landing parties. Some prisoners were taken, a supply dump and wireless station wrecked before the German ships returned safely to base. For the only time in her existence Tirpitz had fired her main armament offensively. Although her crew were not to know it, Tirpitz had carried out her last operation, for in the 14 months remaining to her, she was to come under relentless attacks. The British decided to use midget submarines known as X- craft towed by submarines in an attempt to cripple or even sink the Tirpitz. Specialised training was carried out in Scotland during the summer of 1943.

The X-craft would be manned by a transit crew and when they were close to the target they were replaced by an operational crew. The submarines towing their X craft left their base in Scotland. Three had their tow lines parted and were separated for over 36 hours before two were found again and continued the passage. But one was lost without trace with her transit crew. Due to technical problems another was forced to scuttle the craft and the crew taken on board the submarine.

Throughout 18th September the submarines continued to tow the 4 remaining X-craft and on arriving at their rendezvous point the operational crews were transferred. They successfully manoeuvred through a minefield on the surface and then dived at dawn to continue through the fjord for the final run in to their target that was sheltered behind anti torpedo nets only 6 km's ahead. Two of them after overcoming this hazard reached the Tirpitz. One of the X craft however, malfunctioned and broke surface. She was seen from the deck of Tirpitz, mistakenly identified as a porpoise and disregarded. She was not so fortunate a second time when, after the crew attached both charges, she again broke surface and was identified correctly.

The X craft met with a fusillade of small arms fire and hand grenades; escape was impossible. The crew scuttled the craft and surrendered to a German picket-boat and taken aboard the Tirpitz. Meanwhile two other X craft had attached their charges to the Tirpitz. The fourth X craft had become entangled in the antisubmarine nets, but eventually broke clear and attached the charges to the Tirpitz. This craft then experienced technical problems, surfaced and was forced to surrender.

German divers checked the hull of Tirpitz for limpet mines and a wire was being drawn along the battleship's hull when 2 violent explosions caused the Tirpitz to leap upwards several metres. All the lighting circuits and much of the power supply were put out of action and the ship settled down with a list to port. The attack had been a tremendous success. For the loss of only nine men killed and six men captured the battleship had been severely damaged; Tirpitz's main engines were put out of action and the after- turrets damaged. German casualties were one man killed and forty wounded.

Of the 6 X-craft which set out none returned but the six men taken prisoner came safely home after the war. Both Lieutenants Place and Cameron were awarded the Victoria Cross for the successful placing of their charges. Sub-Lieutenants Lorimer, Kendall and Aitken received the Distinguished Service Order, and crewman Goddard the Conspicuous Gallantry Medal. In the German archives captured after the war was a report that 'as a result of the successful midget submarine attack the battleship Tirpitz has been put out of action for 6 months'. In fact, she did not move from her anchorage until April, 1944, after extensive repair work had been carried out. She was then moved to Tromsø Fjord.

The loss of the Battle Cruiser Gneisenau, bombed in dry dock in Germany after the Channel dash, had dissuaded Hitler from risking the return to Germany of Tirpitz and there was no dry dock big enough to take her in Norway. The British Admiralty decided that the Fleet Air Arm should attack Tirpitz as soon as the aircraft carrier Victorious had completed her refit trials. The capital ships of the Home Fleet consisting of Duke of York, Anson, Victorious, and Belfast, together with other carriers and destroyers steamed to Norway.

By dawn on 3rd April 1944, the still undetected combined force was in position. The first of the Corsairs took off from Victorious, followed by Barracudas, Wildcats and Hellcats from the other carriers. As the strike was approaching Tirpitz the smoke screen ashore was activated. The Corsairs remained at 3 000 metres to cover the Barracudas against counter-attack. The

Wildcats and Hellcats came in low over the hills, strafing the battleship with machine-gun fire as the Barracudas began their bombing dives. The bombs were meant to be dropped from a height above 1 000 metres to ensure penetration of the armoured deck but in their enthusiasm and determination to achieve accuracy most of the pilots dived much lower than this. Six direct hits were claimed plus 3 probable hits and the battleship's upper deck was left bloody with the wounded.

As the first strike was attacking the second strike made for Tirpitz. The Hellcats attacked the battleship's anti-aircraft positions with the Wildcats strafing the unprotected bridge and upper deck before the Barracudas came in to the attack. Eight definite and 5 probable hits being claimed, but the 725 kg bomb which hit the bows failed to explode. By 08 00 hours all the aircraft had landed back on their carriers except for 2 Barracudas shot down. In just 2 minutes the Fleet Air Arm had ruined much of the 6 months of repair work and had done incalculable harm to morale. The upper deck was a shambles and the casualty list formidable. One hundred and twenty two men had been killed and three hundred and sixteen wounded including the captain, many of them by the machine gun fire from the fighters. It was not until June 1944 that Tirpitz could recommence trials.

On 17th July 1944, another attack was mounted by the Fleet Air Arm. Forty four Barracudas, loaded with 450 kg and 225 kg bombs were escorted by 18 Corsairs and 15 Hellcats. Tirpitz received warning of the approach of a large formation of aircraft, and the battleship was totally obscured by a smoke screen. No hits were observed and 1 Barracuda and 1 Corsair were lost.

The Tirpitz was only finally destroyed when British inventor, Sir Barnes Wallis, built a special bomb for the job. The same man who had previously developed the bouncing bomb used in the Dambusters Raid. In 1944 he devised the ‘Tallboy’, a_five and a half ton bomb capable of piercing the Tirpitz's armour plating. A most devastating bomb designed for accurate flight and great penetration.

As the war progressed both the technique and technology of the Royal Air Force had increased enormously. The combination of the genius of Barnes Wallis together with the inspiring leadership of Wing Commander Guy Gibson led to the creation of the elite 617 squadron. The most determined and skilled squadron in Bomber Command.

The Tirpitz was attacked again on 29th October. Thirty seven Lancaster’s were dispatched from Lossiemouth, Scotland. The removal of the mid-upper gun turrets and the installation of extra

fuel tanks meant the Tirpitz could now be reached directly from land. Thirty two aircraft released Tallboys but no direct hits were scored. Early in the morning of 12th November, 32 Lancaster's took off on the final raid against Tirpitz, aptly named Operation 'Catechism'. As the Lancaster's came over the mountain range they were met with intense anti-aircraft fire from Tirpitz, shore batteries and flak ships, but the battleship herself lay clearly visible. Astonishingly there was no smoke-screen or fighter cover. The Lancaster's were equipped with the new and deadly Mark XIV bombsight and conditions were ideal.

Twenty nine bombs were dropped. The first bombs narrowly missed the target, but then a great yellow flash burst on the foredeck and the Tirpitz was seen to tremble as it was hit by another two Tallboys. A column of steam and smoke shot up to about 100 metres and within a few minutes the ship started to list badly. Flames and smoke belched out of Tirpitz's stricken hull, and she immediately took on a list of 30 degrees to port. No ship, not even Tirpitz, could withstand direct hits by such great bombs. Aboard the stricken vessel counter flooding had been ordered to correct the list, but the already slim chances of saving the ship were quickly crushed by another bomb spectacularly obliterating one of her main turrets, while further near misses shook the ship violently.

Her end came very suddenly. The first two direct hits had pierced her vitals and while she listed still further, her after-magazines blew up with a tremendous explosion, causing her immediately to roll over. As the last of the Lancaster's flew homewards, the crews could see the 'Lone Queen of the North', as she was now called, was dead. The lack of fighters and smokescreen proved to be disastrous.

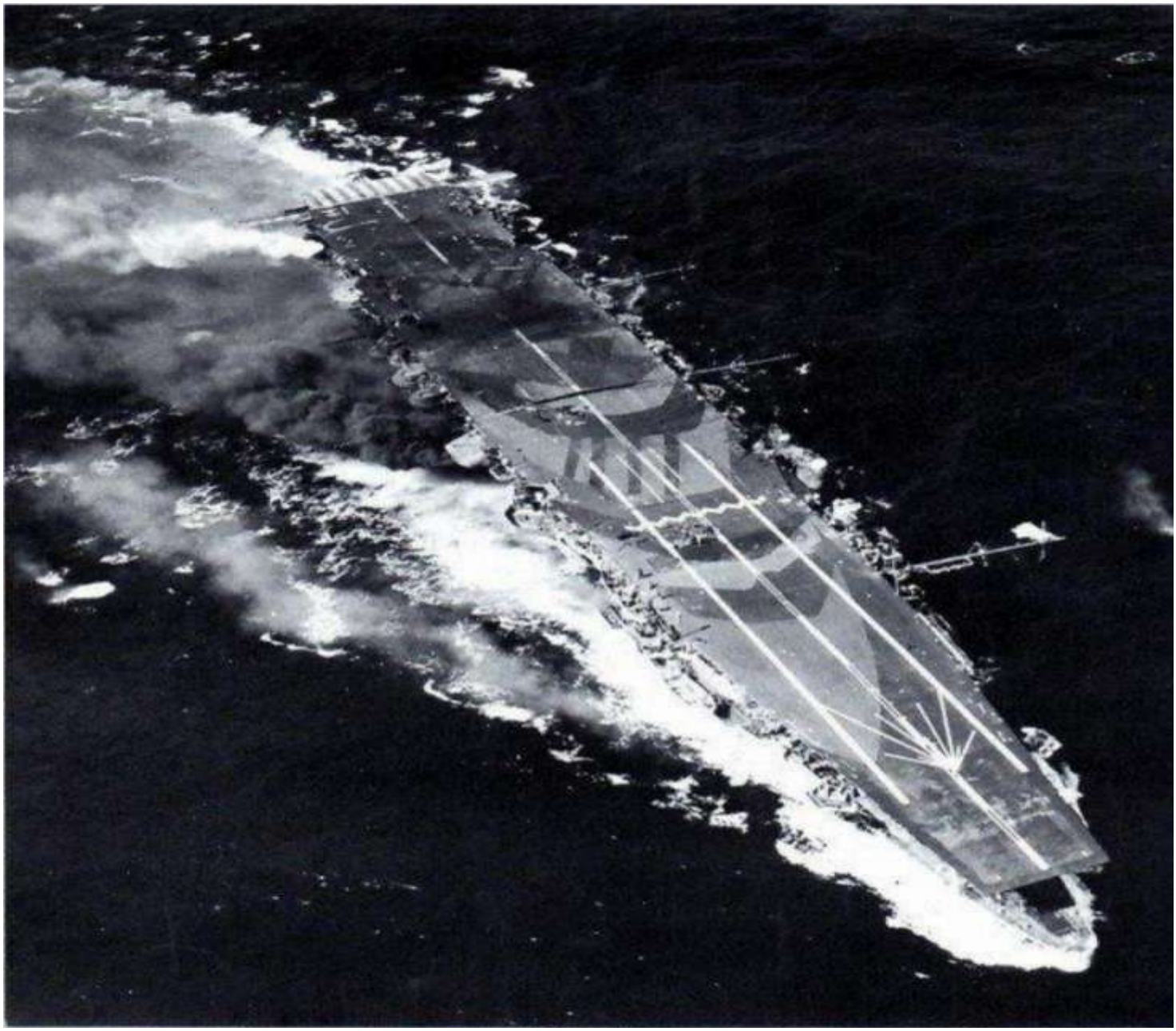
How did the German precautions fail? The 8 German fighters which took off had been misdirected and recalled before they reached the Tirpitz. Investigation into the failure of the smokescreen revealed that it had not been operational due to repairs. More than one thousand men were trapped when she heeled over so suddenly. Over eighty of these picked their way through the various decks to the upturned bottom of the hull, upon which they knocked furiously, attracting the attention of those outside. A hole was cut in the steel hull through which they escaped, 30 hours after the battleship turned turtle. Other knockings were heard too, but before the unfortunate men could be reached, the waters of the fjord filled their compartments. The rescue teams heard the sailors chanting 'Deutschland Uber Alles' before silence settled upon the hull.

Tirpitz had perhaps the most inglorious and tragic career of any warship in World War Two. She never saw action with an Allied convoy or battle fleet and activities were limited to scurrying from one Norwegian fjord to another, and making furtive excursions which ended as soon as any danger approached. She was the last heavy warship left to the German navy by 1944; but for the British, she was too great a threat to be ignored.

Not for Tirpitz the fate of the Bismarck, a brief moment of glory and then a valiant fight against the odds, and she was always unable, apart from the minor affair at Spitzbergen, to use her strength in action because of Hitler's fear of losing capital ships. Her destruction was thus piecemeal and her end has an air of tragic inevitability, for though she sank quickly enough when the Lancaster's bombs ripped her apart; she had in reality been wasting away for months before that. And yet, some success must be accredited to her. She had brilliantly achieved the aim of a 'fleet in being' by tying down far greater enemy forces. Whilst sea worthy she had presented a permanent threat to the Atlantic and Arctic sea-routes, and a tremendous annoyance to the Royal Navy, which desperately needed to send the battleships and aircraft-carriers of the Home Fleet to more active theatres, yet dare not while Tirpitz floated.

Little wonder, then, that all possible means were used to destroy her and her epitaph, if one is to be written, should be, *'she could not be left alone'.*

CHAPTER TWELVE



THE BATTLE OF LEYTE GULF

The largest naval battle in history, the Battle of Leyte Gulf off the Philippines was another step in the U.S. advance toward the Japanese home islands. All available Japanese forces were thrown into the area but the separate units failed to unite, resulting in several actions scattered over a wide area. All four Japanese light carriers were sunk, as were three battleships. Leyte Gulf also marked the first use of a desperate new tactic: The kamikaze carrying a bomb deliberately crashed on its deck.

When American forces in the Philippines capitulated in May 1942, General MacArthur's pledge to return seemed at best a valiant dream. MacArthur himself acknowledged; "The road back, looked long and difficult". But the general's determination became his driving force, and within two and a half years the Americans were ready to return.

By mid-1944, a succession of staggering reverses had brought Japan to the brink of defeat. The great Japanese military force that had carved a mighty empire across East Asia and vast stretches of the western Pacific had suffered heavy losses in men, ships and planes. Allied offensives pressed relentlessly against a crumbling Japanese strategic perimeter and gathered increasing strength for the final crushing blows. The swift, powerful carrier and battleship flotillas of Admiral Chester Nimitz struck far and wide, devastating Japanese defences and seizing island after vital island in an unremitting drive toward the heart of Japan's empire. A second major enemy force, the armies of General Douglas MacArthur, with powerful air and naval support, had fought its difficult way up the island axis of the south-west Pacific in a punishing assault that threatened Japanese lines of communication to the vital East Indies. And complementing these twin offensives were the strangling blows of American submarines and long-range bombers, striking repeatedly at Japanese shipping and rear area bases. Indeed, American victories in the Marianas had brought the Japanese home islands themselves within range of U.S. heavy bombers.

Japan was well aware that an American seizure of the Philippines would effectively end the flow of precious oil from the southern empire. The Philippines were also a key link in the island chain which provided a natural security perimeter behind which merchant ships passed to and from the homeland. US submarines were constantly disrupting the movement of supplies along the chain, but the close proximity of each link's naval and air bases made these attacks risky and costly.

In July, therefore, Japanese strategic planners took another look at the deteriorating situation. On the 24th, Imperial General Headquarters issued a comprehensive plan of defence to hold the Philippines, Formosa, the Ryukyus (Okinawa), the four main Japanese islands, and the Kuriles. Codenamed Sho (Victory). The Sho plans required close timing and coordination. Skill in execution, no less than good fortune, would determine their outcome. And on their success or failure rested the fate of Japan. It involved a complicated scheme of manoeuvre to counter any Allied offensive with massive naval, air and land attacks in a climactic `decisive battle' to determine the outcome of the war. Given the weakened state of Japanese combat units,

however, none could be committed until the precise target of the enemy offensive was determined. Then, combined naval and air forces would attack at the last possible moment to destroy transports and covering warships. In this manoeuvre, the once proud Japanese carrier forces, now all but stripped of first-line aircraft, would be reduced to a decoy role, to draw off the American battle fleet and leave the rest of the invasion force to Japanese naval gunfire and land-based air strikes. Any enemy troops who subsequently managed to get ashore could then be easily handled by the Japanese army.

Meanwhile, the Americans were working out details for the liberation of the Philippines. By-passing and isolating Japanese strong-points in the Pacific had proved to be a highly successful American tactic and this policy dictated that the Philippines also should be by-passed. However, the decision to liberate this large group of heavily fortified islands was largely political. It was deemed essential to American prestige not to by-pass the Philippine people. The combined strength of the United States Army and Navy was therefore to be committed to a single course of action.

MacArthur's drive toward the Philippine Islands, which had brought his Southwest Pacific Area forces westward along the coast of New Guinea, was the southern prong of an enormous pincers movement. The northern prong, involving the Pacific Ocean Areas forces under Admiral Chester Nimitz, had thrust through Japanese-held island groups - the Solomons, Gilberts, Marshalls and Marianas - and crippled the air arm of the Japanese Navy. By September 1944, both great forces were poised some 300 miles from the southernmost Philippine island, Mindanao.

The invasion now about to take place had long been the subject of debate. MacArthur and Nimitz, coequal commanders who each took orders only from the U.S. Joint Chiefs in Washington, had cooperated effectively in their converging drives toward the Philippines, but they had disagreed on the next phase of the campaign. Nimitz did not share MacArthur's emotional commitment to liberating the Philippines. He was interested in the islands mainly as stepping-stones to another objective: Formosa, 200 miles north of the Philippines and roughly 600 miles south of Japan itself. Formosa's capture would also cut Japan off from its southern sources of raw materials and permit the Allies to land on the China coast around Hong Kong, where they would be able to build air bases from which to bomb Japan.

MacArthur rebutted that if the Philippines were recaptured first, the invasion of Formosa would be easier - and perhaps unnecessary. He even proposed to liberate Luzon, the largest Philippine island. In an effort to settle the debate, President Franklin D. Roosevelt journeyed to Hawaii. There MacArthur presented his views with his usual eloquence. He argued that Luzon could be taken more cheaply than Formosa and that it would serve much the same strategic purpose. He insisted that American honour and prestige in the Far East demanded that the U.S. liberate its own territory, and that it would be easier to do that than to invade Formosa because the Filipinos' loyalty and the help of the guerrillas would make it unnecessary for the U.S. to tie up large occupation forces. The Luzon-Formosa issue remained unresolved.

The debate was finally settled quite by accident during the second week of September 1944. At that time Admiral William 'Bull' Halsey, commander of the Third Fleet under Nimitz, launched a series of air raids on the Philippines to test their defensive strength. Vice Admiral Mitscher, commander of the Third Fleet's Task Force 38, executed the attacks, and planes from his fast carriers, battered Japanese airfields in the central Philippines. Returning pilots reported that they had destroyed 478 planes, most of them on the ground, and had sunk 59 ships. There was little opposition.

To Admiral Halsey this was "unbelievable and fantastic", and he jumped to the conclusion that the Japanese position in the Philippines was "a hollow shell with weak defences and skimpy facilities". He became convinced that the whole invasion timetable could he accelerated and he proposed a speedup. Nimitz generally approved Halsey's suggestion, and on 13th September, passed it on to Washington. The Leyte invasion was moved up by two months to 20th October 1944. MacArthur clinched the matter by promising the Joint Chiefs that under the new schedule he would be ready to invade Luzon before the end of the year. On 3rd October the Joint Chiefs made it official: the invasion of Luzon would follow the campaign for Leyte.

Even as the Japanese prepared to implement Sho, a major American offensive was about to begin. As stated previously, after months of debate over targets and objectives, the United States Joint Chiefs of Staff approved plans for the invasion of the Philippines. On Halsey's recommendation, plans for the seizure of Mindanao and other intermediate objectives were dropped in favour of a direct assault on Leyte on 20th October 1944. Unbeknownst to the Americans, after the fall of the Marianas, Imperial General Headquarters had designed the Sho plan. This radical scheme, divided Japan's Pacific sphere into four huge defence zones, each with its own plan for handling an Allied attack. Every local commander was forbidden to commit

his troops or planes until Tokyo activated the plan for his zone. Thus the failure of Japanese aircraft to effectively oppose Halsey's carrier-plane attacks was nothing more than a reflection of the commanders' obedience to their standing Sho orders. In fact, Imperial Headquarters had decided that the Sho, defence plan for the Philippines would not be triggered until the Americans invaded Luzon, which the Japanese considered the most important island in the sprawling archipelago.

The Japanese leaders believed that they would be able to correctly anticipate America's next invasion sufficiently far in advance. However, Admiral Halsey played havoc with the Japanese plans as TF-38 destroyed the aircraft defences piecemeal. This placed the Sho plans in trouble from the very beginning. Firstly, the majority of Japanese air power throughout the chain was knocked out before the battle even began. Secondly, they were not able to forecast the invasion location until after it was too late. Thirdly, the Sho plan to respond quickly was delayed until additional aircraft could be flown down from Japan. Once the Japanese were convinced that the invasion of Leyte Gulf was for real, they set an elaborate plan in motion which would involve all of their available combat ships. The stage was now set for the world's largest naval engagement - the Battle for Leyte Gulf.

MacArthur would be initially operating without land-based air cover. Until he could establish airfields on Leyte itself, he would be dependent on the carrier support of Halsey's Third Fleet and on the closer protection of Vice-Admiral Thomas Kinkaid's Seventh Fleet, which had the immediate mission of transporting and supplying the invasion force. Halsey's armada, with nearly 100 modern warships and more than 1 000 planes, was one of the strongest battle fleets ever assembled. But it was not under MacArthur's command, and Halsey retained the option of withdrawing his support of the beachhead should a more lucrative mission present itself. The Seventh Fleet, to be sure, was 'MacArthur's Navy' as it was popularly called - but it was organized primarily for transport, bombardment and assault missions, and its air element, mounted on small, slow, unarmoured escort carriers, had only a fraction of the strength of Halsey's. In this divided command arrangement - of which the Japanese were unaware lay the best hopes for the success of the Sho operation.

The Japanese were also victims of a confused and divided command structure, which denied them the central control so necessary for execution of the complex Sho plan. This was especially true in the Philippines, where no single commander existed to coordinate the multi-faceted defence. General Yamashita (of Singapore fame) commanded the Fourteenth Area

Army and Lieut. General Tominaga commanded the Fourth Air Army. Each were separate, independent units, responsible to Field Marshal Count Terauchi. He, in turn, had the entire army area command from the Philippines to Burma, and thus could devote only part of his time to coordinating operations in the Philippines. Naval forces were entirely separate. Practically all were a part of Admiral Toyoda's Combined Fleet. The major combat units, each an independent element responsible only to Toyoda, were these: Vice Admiral Kurita's 1st Striking Force of battleships, cruisers and destroyers, located near Singapore so as to be assured a ready source of fuel; the carriers of Vice-Admiral Ozawa's Main Body, in the Inland Sea of Japan; and Vice-Admiral Shima's 2nd Striking Force, consisting of some cruisers and destroyers, also based in northern waters. Under separate commands, but also reporting to Toyoda, were naval air units in the Philippines and elsewhere. The Combined Fleet commander would thus have to control and coordinate all naval forces in the Sho operation, while Field-Marshal Terauchi had a similar responsibility for army units, and neither had a link with the other except through the separate Army and Navy Sections of Imperial General Headquarters.

For the Japanese Navy, the Battle for Leyte Gulf would be the last real chance to survive - and the last real chance to stem the American tide. Toyoda's fleet was divided into three forces. The most powerful of these was Vice Admiral Takeo Kurita's Centre Force, which included the mammoth battleships Musashi and Yamato. Kurita, approaching from Singapore via Borneo, planned to steam eastward through the middle of the Philippine archipelago, transit San Bernardino Strait between Luzon and Samar and emerge into the open sea. Then he would come roaring down from the north upon the American invasion forces in Leyte Gulf at dawn on 25th October.

At the same time, Vice Admiral Shoji Nishimura's Southern Force was to enter Leyte Gulf from the south through Surigao Strait with a fleet of 7 older, slower warships. Nishimura's force was the second arm of the pincers movement that Toyoda hoped would wipe out the American invasion fleet. Behind Nishimura, serving as a sort of rear guard for his ships, would come Vice Admiral Kiyohide Shima with 7 cruisers and destroyers.

The third segment of the divided fleet, the Northern Force, was weak but indispensable to Toyoda's hopes. It consisted of 4 aircraft carriers, which had put out from Japan in the company of 2 battleships, and 11 light cruisers and destroyers. This force, under the command of Vice Admiral Jisaburo Ozawa, had sailed from Japanese home waters with only 116 planes aboard. But Ozawa needed no planes to fulfil his mission; he was to be a decoy and his only function

was to lure the Third Fleet carriers north, away from Leyte Gulf, so that Kurita, Nishimura and Shima could strike unopposed.

The Japanese revamped their naval tactics to make the most of their great strength in battleships and cruisers. The pride of the fleet were the 68 000 ton Yamato and Musashi; they were the largest battleships afloat and possessed the biggest guns as well - 18 inches. The Sho-1 plan called for these mighty vessels and their accompanying ships, backed up by land-based planes, to sink the American invasion fleet.

Almost immediately, this disjointed command arrangement contributed to a major Japanese blunder. Halsey's carriers undertook heavy pre-invasion strikes against Japanese bases. After some hesitation, Toyoda independently directed implementation of the Sho plan by naval air units, in the mistaken belief that the invasion had actually begun. Terauchi, however, did nothing - although it probably would have mattered little if he had. Toyoda's premature commitment of his air units resulted in extremely heavy Japanese losses: in less than a week Halsey's flyers destroyed more than 600 Japanese naval aircraft, at small cost to themselves, crippling Toyoda's air arm. It was now impossible to carry out the vital initial air phase of the Sho plan, to defend Combined Fleet surface units against American air strikes, or to reinforce the relatively weak Japanese army air groups in the Philippines to protect Yamashita's troops.

This error only served to compound the confusion among Japanese commanders, so that when the invasion of Leyte actually did begin a few days later there was a crippling delay in implementing Sho. American forces began preliminary landings to the east of Leyte on 17th October, following up with minesweeping and clearing operations the next day. But not until the evening of the 18th, after considerable confusion among the various Japanese commanders involved, did the Army and Navy Sections of Imperial General Headquarters order the start of the Sho operation. And not for an additional 37 hours did Toyoda actually issue execution orders to the Combined Fleet. Thus, when MacArthur's forces landed on Leyte itself on the morning of 20th October, Japanese fleet units were still far away from Philippine waters. On top of the earlier Japanese air losses, this delay frustrated the Sho objective of catching the American invaders in the midst of their landing operations.

During the American strikes, Fukudome had sent several squadrons of torpedo bombers to attack the ships of the Third Fleet at night. Although most of these planes were shot down too, they succeeded in damaging the cruisers Canberra and Houston so badly that the ships had to

be towed away to safety. The inexperienced Japanese pilots - apparently mistaking the flames of their downed planes for burning ships - came back with such enthusiastic claims of success that even cynical Japanese commanders thought that Halsey's force had been severely crippled. The alleged victory was soon inflated even more.

Japanese newspapers headlined a 'Second Pearl Harbor', and the Emperor ordered celebrations. The national euphoria affected the judgment of Imperial Headquarters. When an American invasion fleet appeared in Leyte Gulf a few days later, the new confidence of the Tokyo planners prompted them to question their earlier decision to fight the decisive battle on Luzon. General Yamashita saw no reason to shift the plan from Luzon, where most of his troops stood ready in prepared defences. But his superior, Field Marshal Terauchi, argued that Sho should go into effect whenever the first Philippine island was invaded. He won over Imperial Headquarters to his view; Tokyo believed that at least half of the Third Fleet had been sunk and that the Americans were recklessly attempting an invasion of Leyte with reduced forces. Presumably, the weakened U.S. carrier-plane force would be unable to prevent a massive movement of Japanese troops and supplies to Leyte. The decision was made: the climactic battle would be fought on Leyte. The order was carried by liaison officers who did not arrive in Manila until 20th October. By that time, the invasion of Leyte was under way.

To retake the island, the separate commands of General MacArthur and Admiral Nimitz had converged on Leyte's east coast. Nimitz's Third Fleet, under Halsey, contained Mitscher's force of 16 fast carriers, plus 6 fast new battleships and 81 cruisers and destroyers. Almost everything else came under MacArthur's control, adding up to a staggering command: Lieut. General Walter Krueger's Sixth Army, with 6 divisions totalling two hundred thousand men; Lieut. General George Kenney's Fifth Air Force based on five Pacific islands; and 'MacArthur's Navy', Vice Admiral Thomas Kinkaid's U.S. Seventh Fleet, which was to support the beachhead with its small escort carriers and slow old battleships. All these units arrived unopposed, and Krueger's assault forces met with only light resistance as they went ashore on the morning of 20th October. The Americans assumed that enemy warships were closing in around them, but they had no inkling of what the Japanese battle plan might be.

However, the Japanese plan began to unravel almost at once. On the morning of 23rd October, Kurita's approaching Centre Force was spotted by two American submarines, and they radioed a warning to the Third Fleet, giving Halsey his first news of what the Japanese were up to. Alerted for action, the Third Fleet carriers swung east of the Philippines and dispatched scout

planes to search for Kurita's ships. The next morning 24th October, a search plane from the U.S carrier Intrepid found Kurita's Centre Force; another plane from the Enterprise located Nishimura's Southern Force; and a Fifth Air Force patrol bomber observed Shima's Southern Force. With mounting excitement, Admiral Halsey assumed direct tactical command of Mitscher's carrier planes by personally ordering them to attack the big target, Kurita's Centre Force.

American radar picked up several large groups of Japanese planes headed for the American Third Fleet. These were the remains of Admiral Fukudome's air forces based on Luzon, about 200 planes in all. But the Americans were ready for them. Hellcat fighters destroyed about 70 of the Japanese aircraft and prevented all but one of them from getting near the American ships. However, that one Japanese plane dropped a bomb on the carrier Princeton, turning her into an inferno.

The bomb had penetrated deep within the Princeton, where it exploded, set off secondary blasts, and hurled flaming aviation fuel throughout the ship's interior. Although the blaze seemed manageable at first, the Princeton was already doomed. At around 15 30 hours a great explosion shook the carrier, tearing apart her stern and throwing huge lethal fragments of steel into the midst of the fire-fighters and across the crowded deck of the cruiser Birmingham, which had drawn along-side to assist. With her upper decks covered with killed and wounded, the Birmingham had to pull clear of the stricken carrier in order to take care of her own casualties and repairs. The Princeton, once again fully ablaze, was abandoned. American torpedoes sent the flaming vessel to the bottom, the first fast carrier to go down in two years.

Yet the sinking of the Princeton cost the Japanese dearly. In concentrating all planes in the vicinity on one of Halsey's carrier groups, Fukudome had left Admiral Kurita's Centre Force with practically no air cover. Their assigned role in the Sho plan had been to destroy enemy warships blocking the approach of the Japanese fleet, had not even partially achieved their mission. Nor had army aircraft of General Tominaga's forces been any more successful in their attacks that day on Seventh Fleet units in Leyte Gulf. In a mass attempt to sink the great concentration of invasion shipping there, nearly all of these planes had struck again and again at the landing area throughout the 24th. The repeated assaults had forced American aircraft from the escort carriers to break off their ground support missions in order to protect the anchorage. But Tominaga's flyers had caused little damage to shipping. And nearly seventy

Japanese planes - perhaps half the total number of attackers - had fallen victim to Admiral Kinkaid's fighters and anti-aircraft gunners.

Meanwhile, Admiral Halsey had been inflicting sharp punishment on the two Japanese surface forces steaming towards Leyte Gulf. An initial attack by about a score of Third Fleet pilots on Nishimura's ships caused only light damage. But Kurita, who received the brunt of the air strike, was less fortunate. From just before 10 30 hours until the middle of the afternoon, five separate blows - a total of well over 250 sorties - staggered his force as it made its way doggedly through the narrow, reef-infested waters of the Sibuyan Sea.

At 15 30 hours, finally, shaken by a number of false submarine alarms, and fearing continued air assaults in the confined waters of the San Bernardino Strait that now lay just before him, Kurita decided to reverse his course for a while. It was not until 17 14 hours, when he felt that the approaching darkness ruled out further American air strikes, that he once again resumed his original course towards the strait. An hour later he received a brief directive from Toyoda that had been despatched to all naval units engaged in Sho: 'All forces will dash to the attack, trusting in divine assistance'! In response, Kurita informed Toyoda that he would 'break into Leyte Gulf and fight to the last man'.

Two of the Third Fleet carrier groups had launched planes for a massive attack on Kurita's powerful force as it came steaming toward San Bernardino Strait. Without fighter protection, Kurita had to rely on his vessels' anti-aircraft firepower. Each battleship carried 120 anti-aircraft guns, each cruiser 90. Kurita also had a unique secret weapon: the huge 18 inch guns aboard his super-battleships, the Musashi and the Yamato, could be elevated to fire at aircraft with a special type of shell known as sanshikidon, each of which would spray 6 000 steel pellets in shotgun style over the sky.

With all antiaircraft guns pointed skyward, Kurita's battle-ships looked like giant porcupines when the American air-planes struck. The first wave of 21 fighters, 12 dive bombers and 12 torpedo bombers from the carriers Intrepid and Cabot flung themselves against a wall of flak at 10 30 hours. Several of the planes were hit, but many got through. The U.S. fighters strafed the decks of the warships and forced the gunners to take cover as the torpedo bombers skimmed in to drop their missiles. One torpedo hit the cruiser Myoko, which lost speed and had to retire. A bomb and a torpedo hit the Musashi, but the great ship was protected by armor plate 16 inches thick, and she just shuddered at the blows and steamed serenely on.

Shortly after noon a second attack wave struck. Hits were scored on Kurita's flagship, the Yamato, and 4 more torpedoes shook the Musashi. Three of those torpedoes struck the Musashi's port bow, where her armor was relatively thin, and the explosion peeled back the outer plates. The jagged rip slowed the ship down, and Kurita ordered the entire fleet to reduce speed to 22 knots so that the Musashi could keep up. Less than an hour later another group of planes, from the Lexington and the Essex, swarmed over the groggy Japanese fleet. The Musashi's damaged bow kept spewing a great geyser of water into the air as the battleship ploughed along, making her plight obvious to all the American fliers, who swooped in for the kill. Four more torpedoes ripped into the Musashi. As her damaged bow sank lower in the water, the battleship began to fall behind the rest of the fleet.

Until early afternoon the captain of the Musashi, Rear Admiral Toshihira Inoguchi, refused to fire his main battery's sanshikidon at the attacking planes. Those special shells could damage a gun's bore and Inoguchi wanted to save his barrels for the 3 220 pound shells he still expected to fire at surface targets in Leyte Gulf the next day. But now he knew all too well that the Musashi was in trouble, and he gave his gunnery officer the go-ahead. The three great turrets - three guns each - swung toward the east and the massive barrels were pointed skyward.

When another wave of American carrier planes appeared in the distance at 14 30 hours, the guns fired with an enormous concussive roar. The men on deck were deafened for a while, and those below felt as though a spread of torpedoes had smashed into the ship's hull. The gunnery officer peered through the smoke and noted with dismay that the planes were still advancing. The oncoming pilots, launched from the Enterprise and the Franklin, noted that the antiaircraft barrage was the heaviest they had encountered in the War. But the Japanese marksmanship was surprisingly poor: the shell bursts always trailed behind the planes. Clearly, the Japanese gunners were aiming not by radar but by sight.

While the Franklin's planes concentrated on the Yamato, the Enterprise attacked the Musashi. To blind the anti-aircraft gunners below, the US pilots attacked from behind the sun. Then, one by one, his 9 Helldivers, each carrying a double load of two 1 000 armour-piercing bombs, nosed over and screamed down at the Musashi. The bomber pilots had never seen such an inviting target; big, steady and slow-moving. They stayed late in their dives, released both bombs and pulled away, climbing out of danger to the north. Then the Enterprise's 8 Avenger torpedo bombers spread out and came in low on each side of the Musashi, aiming for the damaged bow. Just as the last Helldiver released its bombs, the Avengers dropped their

torpedoes into the water and swerved away. Wrote one Enterprise officer later; "The big battlewagon was momentarily lost under the towering fountains of near misses and torpedo hits, soaring puffs of white smoke from bomb hits and streaming black smoke from resultant fires. Then the long, dark bow slid out of the cauldron, slowing. Musashi stopped, down by the head, and burning".

Planes from the Intrepid, Essex and Cabot joined those from the Franklin and Enterprise and swarmed over Kurita's ships at 15 10 hours. Several more torpedoes hit the Musashi, knocking out two of her four propellers and forcing damage control personnel to flood three of her four engine rooms to prevent the ship from capsizing. The captain signalled, "Speed six knots. Damage great. What shall we do"?

Kurita ordered the Musashii to return to base, but she was rapidly taking on water, and her list had increased, forcing her to move in a circle. Later, Kurita ordered: "Musashi run aground at top speed and become a land battery". Even this ignominious mission was too much for the Musashi. The executive officer shouted, "All crew abandon ship. You're on your own". The great ship rolled over onto her side, baring her barnacle-encrusted bottom. Water rushed through gaping torpedo holes, Survivors sprinted and scrambled along the ship's bottom, bare feet lacerated and bleeding. Reaching the bow, which now dragged at water level, they stepped into the sea and started swimming. When looking back they saw the Musashi's stern pointing straight up, silhouetted against the setting sun, with several men clinging to it. Then the great ship plunged beneath the sea with loud suction noises and rumblings and underwater explosions. Four hours later destroyers picked up several hundred survivors, but one thousand and twenty three officers and sailors, almost half the Musashi's crew, had perished with the ship.

In addition to sinking the Musashi and crippling the cruiser Myoko, the day-long attacks had damaged the Yamato and two other battleships. The damaged ships could still fight, but Kurita had to slow down his fleet to prevent them from falling out of formation. The westward turn was noted by Halsey's fliers, and it influenced the admiral's next decision. His pilots reported that 4 of Kurita's battleships had been severely damaged, that 9 cruisers and destroyers had been sunk or heavily damaged, and that the remains of the armada were retreating westward. Halsey assumed that the Centre Force was no longer a threat, and he turned his attention to what he thought was bigger game.

All day his planes had been searching for the carriers he felt sure must be part of this massive Japanese naval operation. Finally, at about 17 30 hours, one spotted the carriers of Admiral Ozawa's Northern Force 300 miles to the north of San Bernardino Strait. Now, Halsey reckoned, he had "all the pieces of the puzzle”

Halsey regarded the Northern Force as the major threat; if its air strength was combined with the other enemy forces, it could jeopardize MacArthur's landing operations in Leyte Gulf. Halsey did not know, of course, that Ozawa's four carriers had only a few planes left on board. Lacking that intelligence, the Third Fleet commander considered three courses of action; he could keep his fleet where it was, in position to guard against attacks by both the Northern and Centre Forces; he could send his carriers after the Northern Force and leave his battleships behind to guard San Bernardino Strait, through which the Centre Force would have to pass to reach Leyte Gulf; or he could rush north with his entire armada to destroy the Japanese carriers.

Characteristically, Halsey opted for the all-out attack. Leaving not even a destroyer patrol to give warning if Kurita emerged from San Bernardino Strait, Halsey ordered the Third Fleet north. He had swallowed Ozawa's bait. In choosing to chase after Ozawa, Halsey had made a decision that would come back to haunt him. MacArthur and his Seventh Fleet commander, Kinkaid, believed that Halsey's first duty was to protect the invasion convoy and the troops ashore. But Halsey was responsible only to Nimitz, who had clearly instructed him that his ‘primary task’ was the destruction of the enemy whenever he had the chance. Besides, Halsey was willing to risk condemnation for almost anything but lack of aggressive spirit.

In any case, the lack of a unified command now led to a misunderstanding that nearly proved disastrous for the American forces in Leyte Gulf. Halsey realized that Kurita's Centre Force, battered though it was, might yet attempt to enter the gulf. Even before sighting Ozawa's carriers, he had transmitted to his Third Fleet commanders a stand-by battle plan that set up a separate detachment of fast battleships, cruisers and destroyers to confront Kurita. This group of warships would, if so ordered, form Task Force 34 under Vice Admiral Willis Lee and ‘engage decisively at long ranges’. Halsey's radioed plan was simply an alert, not an operational order for immediate action. To make sure that none of his subordinates misunderstood, Halsey called them on short-range radio and said: "If the enemy sorties, Task Force 34 will be formed when directed by me”.

Although Halsey's original stand-by plan to set up the new task force was not addressed to him, Admiral Kinkaid of the Seventh Fleet received a copy of the radioed message - but not the clarifying amendment. He assumed that Lee and Task Force 34 were being sent to guard San Bernardino Strait immediately. Halsey, who did not realize that Kinkaid even knew about Lee's unborn task force, assumed that planes from Kinkaid's escort carriers would keep an eye on the strait. Halsey also assumed that the Seventh Fleet was strong enough to defeat both the weakened Centre Force and the two sections of the Southern Force. Such was the danger of divided command: San Bernardino Strait was unguarded and no one knew it.

And Kurita was coming back. As Halsey and all his ships raced north through the night in pursuit of Ozawa's decoy carriers, Kurita, who had turned his battered but still-potent Centre Force around again, was once more threading his way through the interior waterways toward San Bernardino, heading for the open sea and Leyte Gulf. At the same time, the second arm of the Japanese pincers, Admiral Nishimura's Southern Force, was approaching Surigao Strait, the southern entrance to Leyte Gulf. Although he knew that Kurita had been delayed and would not be able to keep the dawn rendezvous in Leyte Gulf, Nishimura steamed ahead on schedule, relishing the prospect of engaging the Seventh Fleet in a night battle.

Nishimura's wish was realized in the predawn hours of 25th October, when his warships plunged into a brief but one-sided battle in the darkness of Surigao Strait. Search planes and coast watchers had kept the Seventh Fleet informed of the Southern Force's movements, and Vice Admiral Jesse Oldendorf, commanding Kinkaid's fighting ships, was waiting for Nishimura.

Oldendorf's 6 battleships were old and slow. Three had been damaged and 2 had been sunk at Pearl Harbor; they had been raised, reconditioned and put back into service. Nishimura's ships were even more ancient; his two battleships were of World War One vintage and had been relegated to training assignments for most of the War. Nishimura also had one cruiser and 4 old destroyers, while Oldendorf deployed 8 cruisers, 28 destroyers and 39 PT boats. Furthermore, the American battleships were equipped with fire-control radar, and the Japanese ships were not.

As Nishimura's force steamed single file into the southern approaches of Surigao Strait, it was ambushed by several groups of American PT boats, which had been lying motionless in the water so as not to leave wakes that would give away their positions. The PT's waited until the ships came within range and then darted in to launch their torpedoes. Though none scored hits,

they were able to radio back to Oldendorf precise information about Nishimura's course, location and speed.

A few miles farther north the Japanese entered a more effective prearranged trap: a gauntlet of American and Australian destroyers. As Nishimura's force filed up the centre of the strait, the destroyers raced down both sides of it in formations of two or three, firing half salvos of torpedoes at ranges of about four miles, and then turning and speeding away before the Japanese guns could find them. Zigzagging and throwing up smoke screens, the destroyers escaped after releasing their torpedoes. A few minutes after firing, the crew heard explosions; two of the Japanese ships were hit by the first salvo of torpedoes, and other torpedoes were already in the water from the far side of the strait. Another two-sided attack followed, and then a third. The results were devastating. The battleship Fuso blew up and split in two; Nishimura's flagship, the battleship Yamashiro, took hits, and two of his destroyers were sunk.

But still Nishimura came on, and Oldendorf prepared to cross the enemy's 'T' - a classic manoeuvre in which one fleet cuts in front of the enemy column in a single-file formation, or battle line. Crossing the 'T' had the advantage of allowing every ship in the battle line to fire broad-side at the enemy ships, while they could only return fire with their forward guns. With the advent of aircraft carriers, the manoeuvre had been rendered practically obsolete, since the battle line could not be formed or held under air attack. The absence of aircraft and the darkness of Surigao Strait gave Oldendorf the chance to use the tactic one last time. Thus, Oldendorf's battleships and cruisers steamed directly across Nishimura's path, blocking his passage from Surigao Strait to Leyte Gulf. On every U.S. ship, men studied their radar scopes; firecontrol personnel tracked the range and bearing of the enemy ships and fed a steady stream of aiming data to the men standing by their guns.

Oldendorf, on the flag bridge of the cruiser Louisville, held his fire until Nishimura's lead ship closed the range to 15 600 yards. Then, shortly before 04 00 hours, he gave the order to fire. The Louisville's captain spoke the order into a radio circuit and his voice crackled out from squawk boxes on every ship. Upon giving the order to 'open fire'; the arched line of tracers in the darkness looked like a continual stream of lighted rail-road cars going over a hill. No target could be observed at first, then shortly there would be fires and explosions, and another enemy ship would be accounted for. Within 18 minutes, the battleships West Virginia, California, Tennessee, Maryland and Mississippi fired some 270 shells at Nishimura's vessels from their 14 and 16 inch guns. During that same period, cruisers fired more than 4 000 rounds of 6 and 8

inch shells. The battleship Yamashiro exploded, then quickly capsized and sank. All but one of Nishimura's vessels, a destroyer, had been crippled or sunk. No American ships were lost, although one was severely damaged.

Meanwhile, Admiral Shima's rear-guard section of the Southern Force had passed into Surigao Strait as the battle was ending. To his dismay, Shima found only dense smoke and the burning hulks of Japanese ships. He retreated before Oldendorf's guns could get him too; his only contribution to the Japanese effort was to let Kurita know that there would be no Southern Force to meet him in Leyte Gulf.

Some 200 miles to the north, Kurita's still-formidable Centre Force was taking full advantage of its good fortune - the American mix-up that had left San Bernardino Strait unguarded. In a display of fine seamanship, Kurita had maneuvered his fleet through the narrow channel at 20 knots. His lookouts and his crews at battle stations were sure they had been detected and thought they would have to fight their way out of the channel into the open sea.

Meanwhile; Admiral Halsey and his Third Fleet hurried northward in pursuit of Ozawa's Northern Force. Admiral Lee, the commander of the still-inactivated Task Force 34, doubted the wisdom of the chase; twice he suggested to Halsey that the Northern Force was just a decoy and that the big Japanese effort would be aimed through San Bernardino. Halsey ignored him. The last attempt to rectify the error came after a pre-dawn staff meeting on Kinkaid's command ship, the Wasatch. Commander Richard Cruzen, Kinkaid's operations officer, turned to his commanding officer and said: "Admiral, I can think of only one thing. We've never asked Halsey directly if Task Force 34 is guarding San Bernardino Strait". Kinkaid replied: "All right. Send it". The query was dispatched, but because of a backlog of radio transmissions, Halsey did not receive the message for two and a half hours.

By that time, Kurita had emerged unopposed from the strait and was racing southward along the Coast of Samar Island heading for Leyte Gulf. At daybreak on 25th October, American carriers were sighted on the horizon. This was indeed a miracle. Think of a surface fleet coming up on an enemy carrier group. Nothing is more vulnerable than an aircraft carrier in a surface engagement.

Kurita thought he had caught Halsey's fast carriers with most of their planes down. He judged the ships ahead to be a 'gigantic' enemy task force, including 6 or 7 carriers accompanied by many cruisers and destroyers. In fact, Halsey and his fast carriers were 300 miles to the north,

and 180 of his planes were taking off to attack Ozawa's Northern Force. Ozawa radioed Kurita that he was under attack by the big American carriers, but Kurita never received the message. If he had, he would have realized that only a thin screen of puny ships stood between him and Leyte Gulf.

What Kurita had come upon was Rear Admiral Clifton Sprague's Taffy 3, one of three groups of escort carriers from Kinkaid's Seventh Fleet assigned to provide air cover and antisubmarine patrol for the Leyte landings. These vessels, condescendingly nicknamed ‘jeep’ carriers or baby ‘flattops’, were actually merchant ships fitted with short flight decks. The 6 escort carriers of Taffy 3 carried only about 28 planes each; they could attain a top speed of only 17 knots (half the speed of Kurita's battleships), had virtually no armor plate and were equipped with only 5 inch guns. The group was protected by 3 destroyers and 4 destroyer escorts. Altogether, the 13 ships of Sprague's little fleet had only 29 guns, none of them capable of even denting the thick armor plate of Kurita's battlewagons. Furthermore, Sprague's pilots were trained to provide tactical support for ground troops, not to attack enemy warships.

Sprague's first warning of Kurita's force came just after 06 45 hours, when an Avenger torpedo bomber on a routine antisubmarine patrol off Samar, radioed that an enemy force of battleships, cruisers and destroyers was approaching at high speed. By this time, the lookouts on Sprague's own ship had caught the first glimpse of the pagoda-shaped enemy masts as they appeared on the northern horizon. Sprague wasted no time. He swung his carriers east into the wind at top speed and launched every operational plane - including his fighters. He instructed all ships to throw up smoke screens, alerted his destroyers for an attack and radioed for help.

Within minutes, the 18 inch guns of the Yamato and the 14 inch guns of the other Japanese battleships were dropping salvos all around the American ships. These sent up huge fountains of coloured water red, green, yellow and purple; each shell contained a distinctive dye that helped gunners adjust their fire. Near misses rocked Taffy 3's carriers, hurling men to the decks and showering them with shrapnel. The barrage was close, and getting closer; Then Providence intervened; a rain squall appeared, and Taffy 3 ducked into it. As the last flights of Taffy 3's planes took off to hit the enemy, Sprague changed course, heading south toward the two other Seventh Fleet Taffy groups, whose planes were already on their way to aid him. But the nearest group, Taffy 2, was more than 60 miles away; Taffy 1 was some 130 miles distant. And Oldendorf's battleships, whose big guns were what Sprague needed most, were still in Surigao Strait and could not reach Samar for at least three or four hours.

For the next three hours, while Taffy 3 broadcast repeated calls for help and Kinkaid frantically radioed Halsey to return south to take on the Japanese fleet, Sprague eased south with his carriers in a series of brilliant evasive manoeuvres. The counterattacks by his aircraft and fighting ships were so fierce, so concentrated and so effective that the Japanese continued to believe they were engaging a much bigger force. All the planes that could fly were kept aloft almost continuously; flight-deck crews refuelled and rearmed them when they bounced down on the decks. Once the carriers' small stock of torpedoes was exhausted, the torpedo planes were loaded with bombs; when the bombs were gone the pilots dropped depth charges or made dry runs to trick the Japanese into twisting and dodging off course. Fighters strafed the decks and bridges, sending the gun crews and bridge officers diving for cover. One fighter pilot made 20 attacks - half of them without any ammunition

Under the shaky cover of the planes, Sprague's destroyers and destroyer escorts recklessly threw themselves in front of their carriers. Following zigzag courses and laying great clouds of black and white smoke, they plunged into the midst of Kurita's force in an attempt to get close enough to bring their small guns within range. The destroyers and the destroyer escorts kept firing torpedoes, and though few of the missiles found their marks, the misses served to delay and distract the faster Japanese ships.

The destroyer Johnston was in the thick of the hectic fight all morning. She fired her last torpedoes just before being hit by three 14 inch shells. Then three smaller shells tore into the hull. A rain squall covered the destroyer while her crew made emergency repairs, but she had to be steered manually with her speed cut in half. When the Johnston emerged from a cloud of smoke, she found herself bow to bow with a Japanese battleship. Firing as she went, she ducked back into the smoke and soon came upon the crippled American carrier Gambier Bay, which was under attack by a Japanese cruiser. Realizing that the carrier was damaged too severely to flee, the Johnston's captain, Commander Ernest Evans, rushed in with guns blazing to draw off the cruiser. But the Japanese, intent on larger prey, ignored the Johnston.

At this point a line of five Japanese warships bore down upon the Gambier Bay and her companion carriers. The Johnston turned again and Evans fired at the Japanese column. He hit a light cruiser, and his ship took hits in return. Then, as the Japanese destroyers turned away, Kurita's fast cruisers began to close in on Sprague's carriers. The Gambier Bay was beginning to sink, but she continued to blaze away with her single 5 inch gun.

In the meantime, 300 miles to the north Halsey was attacking Ozawa's decoy Northern Force. From 08 00 hours until 17 00 hours on 25th October, full deck loads of dive bombers and torpedo bombers from three different carrier groups flew repeated sorties against the Japanese flattops. As many as 200 U.S. planes were in the air at the same time. By 10 o'clock one enemy carrier had been sunk and three more damaged. By this time Admiral Lee's Task Force 34 had been activated, but not to fight Kurita as had been originally planned. Instead, the battleships and cruisers of Task Force 34 were sent ahead of the Third Fleet carriers to finish off the Japanese carriers as soon as the planes had done their work. All morning, Halsey had been receiving frantic messages from Kinkaid, reporting on Taffy 3's ordeal and requesting assistance. "Urgently need fast battleships Leyte Gulf at once". The summons surprised Halsey because it was not his job to protect the Seventh Fleet.

Halsey replied that he was busy engaging enemy carriers and pointed out to Kinkaid that the Third Fleet was already too far away to be of much help. Nevertheless, he ordered his fourth carrier group, which had been refuelling far to the east, to hurry to Sprague's assistance. Still Halsey felt he could not break off his own engagement with Ozawa just as he was on the verge of victory. When Kinkaid sent his next dispatch to Halsey, he was so desperate that he wasted no time putting it into code. Halsey received an even more remarkable radio message. This one was from Admiral Nimitz, who had been monitoring the battle from Pearl Harbor and who had received a copy of Halsey's original stand-by order for Task Force 34. Nimitz' message was handed to Halsey on the bridge of the battleship New Jersey. It read: "WHERE IS RPT WHERE IS TASK FORCE 34 RR. THE WORLD WONDERS".

Halsey took the message as a sarcastic comment on his tactics. Nimitz had not intended to criticize Halsey. For a while he had been misled by the earlier Task Force 34 message, but by now he had guessed that the fast battleships were still with the Third Fleet. Aware of Kinkaid's increasingly urgent cries for help, Nimitz had meant merely to nudge Halsey into reconsidering his position. The phrase - the world wonders - especially infuriated Halsey. However, the phrase was part of the nonsense padding routinely added to secret dispatches by coding officers to befuddle enemy cryptographers.

But it was not quite nonsensical enough; it fooled Halsey's decoders, who thought it was part of the message and left it in, and it drove Halsey himself, already uneasy because of Kinkaid's appeals, to change his course. Halsey, as he put it, "turned my back on the opportunity I had dreamed of since my days as a cadet". Leaving Admiral Mitscher to finish off Ozawa with two

carrier groups, he swung Lee's fast battleships - including his own flagship - toward the south in a race against time.

As Task Force 34 sped southward, the battle between Kurita and Taffy 3 took an unexpected turn. The Japanese clearly held the upper hand - though they still did not know it. Disorganized, running out of fuel, slowed down by the bold assaults of the Americans and still convinced that the retreating ships were fast Third Fleet carriers, Kurita made another mistake. He had taken a terrible battering and came to the conclusion that he could not complete his mission and still have fuel to get back to base. Kurita's ships began to retire the way they had come; they would safely transit San Bernardino Strait three hours before Task Force 34 could stop them. The sight of Kurita's departing force left Sprague dumfounded. "I could not believe my eyes", he said afterward. "It took a whole series of reports from circling planes to convince me. I could not get the fact to soak into my battle-numbed brain".

Given the odds, this estimate was not unreasonable. Yet the tiny American force was to fight off the powerful Japanese fleet for more than two hours in a disorganized running battle that almost defies belief. Taking full advantage of rain squalls and smoke screens and displaying outstanding seamanship, Sprague's vessels somehow managed to avoid destruction. Repeatedly the destroyers and frail destroyer escorts hurled themselves boldly at the heavier Japanese warships to cover the retreat of the vulnerable escort carriers. Overhead, Sprague's aircraft, unchallenged by any Japanese planes, struck again and again at the increasingly confused and frustrated Kurita. These gallant counter-actions forced the Japanese into evasive manoeuvres, broke up Kurita's tactical formations, badly damaged 3 cruisers, and sharply reduced effective command and control of the enemy force.

The odds against the courageous Americans were great. The sustained, heavy Japanese fire was overwhelming, and, despite some incredibly poor shooting, Kurita's gunners left almost none of Sprague's thin-skinned vessels unscathed. By 09 00 hours an escort carrier, 2 destroyers and a destroyer escort had succumbed to the weight of Japanese fire and slipped beneath the waves. Few of the other ships had escaped damage, and their continued existence against the overwhelming pressure seemed impossible. It appeared that Kurita must catch his fleeing quarry any moment and destroy him completely.

Then, as Sprague explained it, "the definite partiality of Almighty God saved the day". Kurita was by now thoroughly upset and bewildered. He had no clear conception of the actual battle

situation. He felt that he had heavily damaged a powerful enemy fleet, but that the swift Americans were outrunning him. He feared increasingly heavy air attacks. And, above all, he was still anxious to get to Leyte Gulf. At 09 11 hours, therefore, he halted the fight, directing his scattered vessels to reassemble to the north. The incredulous Sprague could hardly believe his eyes, and was only convinced of his good fortune by the insistent reports of his jubilant flyers.

Yet, having escaped disaster by the narrowest of margins, the tiny American force soon found itself under attack again, this time by a different enemy. Just that morning, the Japanese navy had unveiled a new weapon, the kamikaze, or suicide, bomber, whose pilot sought victory by deliberately crashing his explosive-laden plane into the deck of an enemy ship. Six Philippine-based kamikaze planes had attacked other Seventh Fleet escort carriers earlier in the day. Now, about an hour before noon, another suicide force hit Sprague.

Just as the Americans were beginning to relax after their escape from Kurita, 9 Japanese planes came in just over the wave-tops, too low to be detected by radar, then shot up into the air close to their targets, and dived swiftly down onto their surprised victims. Despite punishing anti-aircraft fire, several of them crashed into or glanced off the sides of the vulnerable escort carriers. One carrier burst into flames and sank in half an hour. Others sustained heavy damage. Twenty minutes later, another kamikaze attack took a further heavy toll in damage and casualties, although it failed to sink any ships. This blow, as it turned out, was the last of the day for Sprague's battered force.

Admiral Kurita, meanwhile, had been making his final major decision of the battle. Having regrouped his scattered units, at about 11 00 hours he had once again turned south-west towards Leyte Gulf. But as he steamed towards his objective, he had begun to reconsider. He was convinced that he had already destroyed most of a large American carrier force, but felt that his action had thoroughly aroused the enemy, who, he was certain, now awaited him with overwhelming air and surface strength. Furthermore, he believed that by now the bulk of the American transports in Leyte Gulf had deposited their cargoes ashore and withdrawn. Did it make any sense, he asked himself, to risk destruction of Japan's last remaining battle fleet for the chance to eliminate a handful of empty transports? The answer seemed clear. At approximately 12.30 hours, with the entrance to Leyte Gulf only forty-five miles away, Kurita abandoned his effort. His mighty force swung north and headed once more for the San Bernardino Strait and escape.

Taffy 3 had outfought and outlasted an overwhelmingly superior enemy - and, in doing so, had kept the heavy guns of the Japanese fleet off the American troop transports and MacArthur's beachhead on Leyte. The biggest, fastest battleships of the U.S. fleet had spent the entire climactic day of the immense naval battle racing fruitlessly north and south without firing a shot. Yet even without the help of Halsey's surface ships, Mitscher's carrier planes demolished all four carriers of Ozawa's Northern Force. Kurita's premature withdrawal had cancelled out the initial American mistake of leaving the San Bernardino Strait unguarded. And with Kurita's retreat, the Battle for Leyte Gulf was over. The U.S. now controlled the seas around the Philippines, and the Sixth Army was safely ashore on Leyte. It was a tremendous victory for the U.S. Navy. All told, in the four major engagements of the battle, the Americans had lost only one fast carrier, 2 escort carriers, 2 destroyers, one destroyer escort and fewer than three thousand men. The Japanese had lost 4 of their remaining carriers, 3 battleships, 6 heavy cruisers, 4 light cruisers, 9 destroyers and about ten thousand men. Their navy was shattered – knocked out of the war for good.

The Battle of Leyte Gulf destroyed the Japanese fleet as an effective combat force and eliminated any further threat to American naval domination of the Pacific. It removed the primary danger to MacArthur's beachhead and secured his line of communications and supply. It thus ensured the reconquest of Leyte, and, therefore, the reconquest of all the Philippines, and the disruption, of Japan's shipping lanes and access to the resources of the Indies. Leyte Gulf was exactly the type of 'decisive battle' that the Japanese Sho plan had contemplated. Unhappily for the authors of that plan, it turned out to be an American victory, which sealed the fate of Japan.

The Battle for Leyte Gulf was fought with nearly every type of ship, boat, aircraft, tactic, and operation imaginable. For example: the last battleship-versus-battleship engagement, the last carrier-versus-carrier battle, destroyer and PT boat attacks (both day and night), battleships against escort carriers, and the introduction of suicide planes (kamikazes). In addition, the battle covered thousands of square miles of ocean. Japan believed that the fate of the nation rested on the outcome of this giant battle. When it was over, the Imperial Japanese Navy ceased to exist as an effective fighting force.

Although the Japanese were convincingly defeated, they fought on fanatically. They had only one weapon left - their desire to die for the emperor. This translated into the kamikaze. Convinced that Americans were too soft to go 'all the way', some Japanese felt that they could

still overcome an enemy who wanted desperately to live, by proving to him that they would kill themselves in the act of killing him.

While MacArthur's Seventh Fleet was battling the Kamikazes, his Sixth Army on Leyte was having troubles of its own. And they were troubles that close air support would have helped - the easy invasion was turning into a drawn–out, slogging affair.

CHAPTER THIRTEEN

USS NEW JERSEY

The keel of USS New Jersey (BB.62) a battleship of 45 000 tons; (57 216 tons fully loaded) was laid at Philadelphia Naval Shipyard on 16th September 1940. On 7th December 1942, exactly one year after Pearl Harbour, she was launched by the wife of Governor Edison of New Jersey. President Franklin D. Roosevelt ordered the ship to be named New Jersey to repay a political debt to Governor Charles Edison. Edison had pushed to have the ship built at the Philadelphia Navy Yard, so that Roosevelt could secure votes in Pennsylvania for the 1940 election. BB.62

was the second to carry the name of the 'Garden State', the first New Jersey launched in 1904, ended sadly in 1922 as a bombing target.

The Iowa-class i.e. Iowa, New Jersey, Missouri, and Wisconsin were the last and largest US battleships designed between 1934 and 1940. The programme called for a doubling of naval strength by 1946. However, delays in the late 1930s meant that only two battleships of the 35 000 ton North Carolina class were complete before Pearl Harbour. All other US battleships were over 17 years old.

After commissioning on 23rd May 1943 and fitting-out completed, New Jersey sailed from Philadelphia for a shakedown Caribbean cruise manned by a war time crew of 2 700. New Jersey carried a main armament of 9 x 16inch guns (in three triple turrets, two forward and one aft) each capable of throwing a 2 700 pound shell thirty miles. The battleship was protected by a 17inch armour belt. Her secondary armament comprised 20 x 5inch dual-purpose (DP) guns in twin mounts. The AA battery consisted of 64 x 40mm guns in 16 quadruple mounts and 60 twin mounted 20mm. Together these 5inch and light AA guns provided New Jersey with the ability to put up a barrage of 17.8 tons of AA fire every minute.

On 7th January 1944 she passed through the Panama Canal (a 65 000-ton limit was imposed by the Panama Canal) on her way to join Vice Admiral Marc A. Mitscher's Task Force 58 of the Fifth Fleet. On 25th January her first combat action was Operation Flintlock, the occupation of the Marshall Islands. While carrier fighter bombers blasted Kwajalein Atoll, New Jersey, Iowa, heavy cruiser Wichita and nine destroyers guarded the carriers. On 4th February, after similar operations off Eniwetok, New Jersey dropped anchor in Majuro lagoon, and here Admiral Raymond A. Spruance, commanding Fifth Fleet, shifted his flag from the heavy cruiser Indianapolis to New Jersey. Next was the invasion of the Marianas where her heavy guns battered Saipan and Tinian. On 12th February 1944, New Jersey left Majuro to head a strike on Truk, the Imperial Japanese Navy's vaunted 'Gibraltar of the Pacific'. While TF58 was refuelling at sea, Japan's Admiral Koga was pulling out his major warships.

Nevertheless, when TF58's planes hit Truk early on 16th February, they caught the enemy unprepared, destroying many aircraft on the ground and taking a heavy toll of merchant shipping. Spruance himself led New Jersey, Iowa, a carrier, two heavy cruisers and four destroyers on a sweep to intercept fleeing warships. About forty miles NW of Truk, Spruance's ships sank a light cruiser and a destroyer. Another destroyer straddled by New Jersey's 16inch

salvoes at more than twenty miles, escaped after firing a defiant torpedo spread. New Jersey carried Spruance's flag in attacks on Palaus, but on 10th April, the Admiral transferred back to Indianapolis. At the end of the month, New Jersey's guns bombarded New Guinea and then, during another blow at Truk, wrecked the Japanese airfield. When the Marine Corps hit the Saipan beaches on 15th June, New Jersey was one of seven battleships of Vice Admiral Willis A. Lee's, providing fire support for Operation Forager.

On 24th August, Fifth Fleet was designated Third Fleet when Admiral William F. Halsey, relieved Spruance, hoisting his flag on New Jersey at Pearl Harbour. Halsey would have preferred a carrier, but carriers are vulnerable, and he could not afford to risk command functions being interrupted by battle damage. His only alternative was the New Jersey. 'The Big J' sailed on 30th August to rendezvous with TF38 on 11th September. After strikes in the southern Philippines, New Jersey went for repair to Ulithi Atoll, the USN's new fleet anchorage in the Carolines, where preparations for the Leyte Gulf Landings were already in hand. While the 'Marianas Turkey Shoot' broke Japan's airpower, New Jersey helped to screen the carriers as American and Japanese pilots duelled in battle overhead.

In October 1944, she was Admiral William Halsey's 3rd Fleet flagship during the Battle of Leyte Gulf. The Japanese had decided to make one last, great sortie. The battle was devastating to the Japanese, who lost around 400 planes and three of their aircraft carriers. New Jersey's role during the four days (23-26 October) of the greatest sea battle in history was scarcely glorious. She missed both the actions she might have fought in. Halsey thought that his carrier strikes had sufficiently mauled the converging Japanese squadrons trying to get amongst the invasion fleet in Leyte Gulf. On the evening of 24th October he rose to the bait presented by Vice-Admiral Ozawa when he left the invasion beaches to steam after Ozawa’s four almost empty carriers. Halsey mistakenly followed a decoy fleet, leaving valuable ships virtually unprotected. Halsey now realised his folly, he had missed a great opportunity to destroy the Japanese main force. At 10 55 hours Halsey swung his fast battleships and three carriers south, working up speed until New Jersey and Iowa, with light cruiser escorts, were way ahead. Halsey reached the invasion beaches just after midnight but Kurita was gone some two hours. Amazingly, the unprotected fleet, by the time Halsey arrived, had already repelled the Japanese in a stunning victory.

For Halsey, watching from New Jersey's bridge, it was the first and only fleeting surface action he saw during his entire career. He had missed both enemy fleets. Halsey had misread the opportunity he had dreamed of since being a cadet.

After Leyte, New Jersey moved north of Luzon Island where, on 29th October, she first encountered kamikaze air attack in strength. Around thirty aircraft dived on her task group: most were downed by the fighter screen. New Jersey's gunners blasted one, but too late to prevent it ramming the notoriously unlucky carrier Intrepid (nicknamed 'Decrepit', because she spent so much time being repaired). Some of this ill-luck spread to New Jersey: badly-aimed MG fire from Intrepid wounded three of the battleship's crew. New Jersey winged another kamikaze but too late to prevent it crashing onto Intrepid, but was more successful with another diving on the carrier Cabot. When 'the Big J' entered Ulithi lagoon on 27th November 1944, she had steamed over 36 000 miles in 95 days under Halsey's flag.

She did not rest long. On 11th December she sailed with Iowa and Wisconsin again for Luzon. For three days, after the force refuelled at sea from tankers, carrier aircraft harassed Luzon's kamikaze airstrips. The kamikazes were temporarily subdued, but an unsuspected enemy was advancing from the east. Because of the rapid advance into enemy waters, insufficient onshore meteorological stations had been established. Third Fleet was briefed twice daily by Weather Control from Pearl Harbour, but local weather patrol planes were hampered by having to keep radio silence. However, each carrier had its 'weather officer'. Early on 17th December, when TF38 rendezvoused once more with the tankers, a sudden Force 8 gale whipped up rising seas, parted fuel hoses and threatened collisions between closely linked ships.

Aboard the carriers, aircraft were lashed to the deck with steel cables. Some returning pilots were ordered to ditch rather than risk the wildly-pitching flight decks. Refuelling was cancelled and during the next few hours, Halsey ordered three course changes. The last took New Jersey into the heart of the typhoon. The US Navy now took its worst storm damage since the Samoan hurricane of 1889.

The 70foot seas smashed from all sides. The typhoon tossed New Jersey as if she were a canoe. What it must have been like on a destroyer one-twentieth of New Jersey's size, one can only imagine. The 2 100 ton Spence capsized on 18th December; only twenty four of her three hundred strong crew survived. The smaller destroyer Hull, pushed so far over by a 110 knot gust that the sea poured down her stacks, went down with two hundred and two men. Only six

men were saved from Hull's sister ship Monaghan. The escort carriers lost 146 aircraft while Monterey and Cowpens narrowly escaped destruction when planes broke loose, collided and started fires. Ten other destroyers, one tanker and a fleet tug were lost or damaged. The death toll reached seven hundred and ninety.

New Jersey continued her Pacific combat operations into 1945. After replenishment from the Fleet Train, Halsey led TF38 through the Luzon Strait. Between 10th and 20th January, his sortie sank some 133 000 tons of Japanese merchant shipping for the loss of only a handful of aircraft. Another typhoon was survived without loss on 13th January. On 27th January, Halsey's flag was lowered on New Jersey at Ulithi and Third Fleet again became Fifth Fleet as Admiral Spruance took command. New Jersey was directly engaged in the conquest of Okinawa in early 1945. She fought off air raids and defended the carriers from Kamikaze suicide planes. New Jersey also provided heavy bombardment, preparing the beaches for American invasion forces. New Jersey now flew Rear Admiral Oscar C. Badger's flag. But she was not to participate in the final scenes of the Pacific war: on 18th April, she sailed stateside, for an overhaul in Puget Sound.

On 14th August, the day before the cease-fire, New Jersey once more became Fifth Fleet's flagship, running up Spruance's flag at Guam. Not until 17th September did she arrive in Japanese waters, where she remained until January 1946. On the 28th of that month, she sailed from Yokosuka with what must have been her happiest 'crew' ever, one thousand GI's on their way back to San Francisco. New Jersey participated in nearly all of the Western Pacific campaigns from her arrival in the theatre in January 1944 until the end of World War Two.

The next two years saw New Jersey active in new waters in the Atlantic. The battleship 'showed the flag' in Britain, at Rosyth and Portsmouth in June-July1947, and to Norway, where she was inspected by King Haakon VII. On 29th June 1948, tugs took her under Brooklyn Bridge (with only 2 feet clearance) en route to her decommissioned berth at Bayonne, New Jersey. The USN's 'mothballed' monsters, many believed, had no part to play in the nuclear age, and that was probably a majority opinion on 25th June 1950, when the Korean War began. On 4th July, when President Harry S. Truman ordered a naval blockade of the Korean coast, Missouri was the only US battleship in service. Then on 21st November, New Jersey was recommissioned under Captain David M. Tyree.

With much the same armament she had carried in 1943-45, the veteran battleship joined Fast Carrier Task Force 77 east of Korea, as flagship of Vice Admiral Harold M. Martin's Seventh Fleet, on 17th May 1951. During her two tours of duty in Korean waters, she operated in direct support of United Nations troops, interdicting Communist supply and communication routes. During her first shore bombardment mission at Wonsan, on the night of 20th May, her 16inch guns thundered for the first time in six years, as she hurled shells into Wonsan harbour. Communist shore batteries responded; New Jersey won the duel, but took a hit on No 1 turret and a near-miss aft, killing one man. This was her only combat fatality in her forty eight years of service. The value of fire-support from heavy ships was obvious from the outset. The North Korean Navy consisted of a few patrol-craft and torpedo boats, most of which were destroyed.

Nor was Communist airpower much to be feared, over the sea, at any rate. But the United Nations ‘interdiction’ of the enemy's troop and supply movements proved difficult, for the Communists had a good transport network and skilful camouflage and maintenance techniques. The navy cruisers scored notable successes, but the shallow coastal waters were cleverly mined, and well-sited. Concealed shore batteries also made off-shore bombardment hazardous. Obviously, battleships with their greater range, aided by spotter-aircraft, were needed. Missouri, arriving in September 1950, proved this immediately by wrecking a bridge and other railroad installations with 50 rounds of 16inch shells. When UN ground forces were on the defensive, it was inevitable that a wide front needed to be held against an enemy greatly superior in numbers, who did not hesitate to concentrate men in frontal mass-attacks. Much of the terrain was unfavourable for conventional land artillery so 'floating artillery' came into its own. On 18th August 1951, for example, New Jersey was mainly responsible for breaking up two determined North Korean attacks with a 24-hour bombardment.

The main limitation of naval gunfire was the vulnerability of spotter-planes and helicopters. As the war progressed, new land-sea cooperation techniques were evolved. Vice Admiral C. Turner Joy, Commander Naval Forces, Far East, put the 'air-gun' system into operation: simultaneous strikes by carrier and land-based aircraft and naval gunfire, with the planes 'repaying' the naval gunners for keeping down enemy AA fire by spotting for them. First used on 13th April 1953, New Jersey fired from thirteen miles out because of coastal minefields. Admiral Joy's verdict was: “We cannot write off the naval gun as obsolete”. During her first tour of duty off Korea, ending on 22nd November 1951, New Jersey steamed forty nine thousand miles and fired more than 3 000 rounds of 16inch and about 4 000 rounds of 5inch. She spent the greater

part of 1952, after an overhaul at Norfolk Naval Yard, on training duty in the Atlantic and Caribbean. But on 10th April, 1953, after taking aboard Seventh Fleet's C-in-C from Missouri, she was once more off Korea. During the next month, she switched operations from the east to the west coast where, with the British cruiser HMS Newcastle, she silenced enemy gun positions in major Yellow Sea ports.

In July 1953 New Jersey and her consorts ranged the east coast. New Jersey's last shots in the Korean War were fired at gun emplacements around Wonsan on 26th July 1953, the day before the ceasefire. On 16th September, at Pusan, President Syngman Rhee awarded the Korean Presidential Unit Citation to the Seventh Fleet in a ceremony aboard New Jersey. General Matthew B. Ridgway, who had replaced MacArthur as Supreme Commander, credited naval forces with maintaining a near 100 per cent effective blockade, but commented that “the excellent gunfire support from the battleships was not sufficient, under the artificial circumstances in Korea (i.e. the absence of enemy sea and air opposition) to warrant the retention of large rifled guns in the US Navy”. Ridgway's verdict notwithstanding, New Jersey remained in commission for four years after the Korean War, employed once more on training duty and 'goodwill' visits.

From September 1954 to January 1956 she served with the US Sixth Fleet in the Mediterranean. In December 1956, however, New Jersey arrived at New York once more for deactivation, joining the Atlantic Reserve Fleet at Bayonne on 21st August 1957. When Iowa and Wisconsin followed her into reserve in 1958 (Missouri had been decommissioned in 1954), it seemed that the big-gun ship was really extinct. However, her third career began on 6th April 1968 when she was re-commissioned in Philadelphia. Operating from her new homeport of Long Beach, California. She arrived off the coast of Vietnam in September 1968. USS New Jersey was the only active battleship recalled to duty during the Vietnam War. The Department of Defence later estimated that one hundred American servicemen's lives were saved for each day she served off the coast of Vietnam, destroying enemy gun positions, troop concentrations and supply areas.

In Vietnam, however, the 'artificial circumstances' of Korea also prevailed. It was estimated that about one thousand of the important targets in Vietnam listed by the Joint Chiefs of Staff lay within range of 16inch naval guns. When she sailed from Long Beach, California, on 3rd September 1968, the battleship's main armament remained the same as in 1943-45. Fire-control computers and ordnance systems were updated, and her 40mm AA gun mountings had

been removed and a helicopter landing pad provided. Her helicopters had already seen service: on 24th July, when New Jersey took on16 inch shells and powder tanks from the ammunition ship off San Diego, it was the first time helicopters had been so employed.

New Jersey's big guns fired on the new enemy for the first time on 30th September 1968, when she hit North Vietnamese batteries and fortified positions in and near the so-called Demilitarized Zone (DMZ). However, the naval commitment to Vietnam was nowhere near as great as in Korea. The use made of New Jersey's firepower in Vietnam has been described as 'amateurish if not unprofessional'. But, tributes to her from men on the ground go some way towards contradicting that comment. A US Army spotter-aircraft observer stated: “After New Jersey got on station and started shelling, she held ground fire to a minimum. This gives us more freedom in picking out better targets. New Jersey is best at rooting out and destroying enemy bunkers”. In the words of a Marine lance-corporal, “I have seen the New Jersey fire and we Marines find it a great comfort to know that if we ever needed her we could have her”. Another Army pilot reported to New Jersey: “Each round has a tremendous psychological effect on Communist troops, and have seen Communist gun crews run away from their guns when you are laying in your big ones”. In October-November 1968, New Jersey 'laid in' more than 3 000 'big ones', as well as close on 7 000 rounds of 5inch, hammering targets all along the coast. On 9th April 1969, New Jersey sailed from Yokosuka, Japan, for the States.

But her homecoming was delayed: the destruction of a Lockheed EC121 Constellation spy plane by North Korean fighters over the Sea of Japan, far from the battle zone, threatened to cause a major reversal of the US policy of disengagement. New Jersey was ordered back to Japanese waters to join a quickly assembled carrier task force. In such a situation, where surface action might threaten, her presence was of token value rather than a real deterrent: a Soviet missile-armed heavy destroyer, firing a missile many times more powerful than New Jersey's 16inch shells, outranges her by some three hundred miles. But the crisis passed without further incident and on 5th May 1969, New Jersey came back to Long Beach for what her crew assumed would be a thorough overhaul before another tour off Vietnam. Suddenly economies were demanded, and top of the Defence Department list was New Jersey. On 2th August 1969, Capt. Peniston relieved Capt. Snyder for the sad duty of taking the battleship back to Bremerton to await the call, should it be sounded, to provide 'firepower for freedom'.

New Jersey was decommissioned for the third time at the Puget Sound Naval Shipyard on 17th December 1969. Captain Peniston relinquished command of USS New Jersey, the world's last active battleship at that time, on 17th December 1969. New Jersey joined the Inactive Fleet in a permanent berth alongside her sister ship Missouri, where skeleton crews kept 'Big J' and 'Mighty Mo' in a state of preservation. The two remaining battleships of the Iowa-class were similarly berthed at Philadelphia, and the battleships Alabama, Massachusetts, North Carolina and Texas were also preserved as memorials, by their name-states. Are these great ships now no more than museum pieces? Most certainly not, as was to be clearly seen in the future. The US Navy officially stated that the four Iowa-class battleships “will remain subject to recall to active service, should a need for them arise”.

New Jersey returned to the active fleet for the final time in December 1982. After mounting a show of strength off troubled El Salvador, she rushed to the Mediterranean in the fall of 1983 to provide fire support for Marines in Beirut, Lebanon. The first U.S. Navy warship to fire a Tomahawk cruise missile or enter the Persian Gulf, the ‘Big J’ served in a variety of roles, including regular deployments to the Western Pacific. She was decommissioned for the fourth and final time in February 1991. She had travelled more miles and fired more shells than any other battleship in history. New Jersey was awarded nineteen battle and campaign stars for her actions against enemy forces in three conflicts, making her the most decorated battleship in U.S. naval history. New Jersey was towed from the Pacific to the Atlantic in 1999 to become a museum at Camden, New Jersey.

As America's most decorated surviving warship, New Jersey has been meticulously restored to her 1990 appearance, and opened for tours in October 2001. Today, as the most modern and complete missile armed museum warship open to the public, visitors can also experience an up close and detailed look at the impressive weapon systems on board the ‘Big J’. New Jersey also offers regular tours, each covering seven decks including the flag and navigation bridges, wardroom, enlisted sleeping quarters, galley and mess decks. All tours feature New Jersey's fully restored Seasprite antisubmarine helicopter and massive 16inch and 5inch guns.

CHAPTER FOURTEEN

THE ECLIPSE of the JAPANESE NAVY

As a result of the Battle of Leyte Gulf in October 1944, the Japanese Combined Fleet could no longer be recognised as the proud and efficient fighting force which had gone to war with the USA and Allies in December 1941. It was by this stage, largely immobilised by lack of fuel and almost a mere shadow of its former self. The Americans went ahead with the last major offensives of the Pacific war, Luzon, Iwo Jima, and Okinawa, secure in the knowledge that the Japanese Navy would never pose a serious threat to them again. After Leyte the Japanese Combined Fleet was incapable of concentrating significant strength to fight the carrier task forces of the Allied Pacific fleets. But the surviving Japanese warships still had a part to play, and they remained high priority targets until the end of the war.

The Midway disaster of 1942 had caused the Japanese to adopt an accelerated and expanded carrier building programme, but, they were never able to replenish the losses of Coral Sea and Midway. The programme was a dual affair, including the construction of brand-new carriers from the keel up and the conversion of merchantmen and suitable warship hulls. Typical of the former category was the Taiho, lost in her first battle in the Philippine Sea on 19th June, 1944 during the Marianas campaign. Taiho had actually been laid down before Pearl Harbour, but for months work on her had proceeded at a crawl. She displaced 29 300 tons, compared with the 25 675 tons of Shokaku and Zuikaku carriers. She could achieve 33 knots and carried 74 aircraft (53 of them operational and 21 spare). The manner of her fate reveal the very great changes, which had affected the Japanese carrier force since Pearl Harbour, when the American submarine Albacore put a single torpedo into Taiho on the morning of 19th June.

At first there seemed very little to worry about; two fuel tanks had been ruptured and the flight-deck elevator jammed shut, but Taiho could still maintain full speed. The immediate hazard was the spreading fumes from the spillage of oil and aviation spirit. By 1944 the Japanese fleet was forced to use crude oil, due to overall shortages. Taiho's ventilators were put on full blast in an attempt to dispel the fumes, a fatal decision. The fumes were spread throughout the vessel and continued to accumulate. The inevitable end came when a spark on the hangar deck detonated them. The effects were cataclysmic. A tremendous explosion shook Taiho from stem to stern, blowing out the hangar walls, ripping the flight deck, and perforating the ship's bottom. She sank within minutes, the victim of an elementary hazard of carrier life which had been obvious for years.

As for the second category of the 'last generation' of Japanese carriers, a typical example may be cited with Shinyo. She started life as the German luxury liner Scharnhorst, which had been at Kobe since the outbreak of war in 1939. Scharnhorst was purchased by the Japanese Government in the months after Midway; she was renamed Shinyo, and her conversion was begun at the Kure Naval Yard in November 1942. Parts were cannibalised from the uncompleted skeleton hull of the fourth Yamato class super-battleship (significant of the change from Japan's pre-war obsession with the big battleship as the prime naval weapon). Scharnhorst's original electric turbines were retained; they were in fact only the second set to be used by a ship of the Imperial Navy. In her new guise, Shinyo finally joined the fleet in mid-December 1943. She was not present at the Battle of the Philippine Sea but was given a further eight 50mm A.A. guns after that action, increasing her total to 50. Shinyo had a best speed of

22 knots and carried a maximum of 33 planes (27 operational and 6 spare), before she fell victim to the far-ranging American submarine arm. Being torpedoed by the Spadefish in the China Sea on 17th November, 1944.

The mightiest battleships in the Imperial Japanese Navy were also Japan's doomed giants. The 64 000 ton Yamato was, along with Musashi, built to be unsinkable. Her 23 500 tons of armour could withstand direct hits which would sink lesser craft. Yet, on 16th December 1941, only days after Pearl Harbour and the sinking of the British capital ships HMS Prince of Wales and HMS Repulse, the first ever capital ships sunk at sea by air attack. Admiral Yamamota C-in-C of Japan's Combined Fleet predicted; "These battleships will be as useful in modern warfare as a samurai sword": When the Imperial Japanese Navy took delivery of the 64 000 ton Yamato, she was already obsolescent.

The first, Yamato-class designs envisaged ships 965ft in overall length with a standard 69 500 ton displacement. By July 1936, the 22ND design since the project's beginning in 1934, plans were for a 64 000 ton ship 860ft long. Two pairs of propellers, one steam-turbine driven, the other diesel powered, would give a 27-knot speed. The heavier diesels were compensated for by lower fuel consumption. However, trouble with experimental diesels led to only steam-turbines being adopted for the new battleships. The 23rd and final design was finished in March 1937, and Yamato's keel laid at Kure Navy Yard on 4th November in that year. Advance preparations included deepening the building dock; providing a crane able to lift 100-ton armour plates; erecting 20ft high fences, protective roofing and rope screens to hide construction. Similar precautions were taken at the Mitsubishi Company's

Nagasaki yard where the keel of Musashi was laid on 29th March 1938. Her launching weight of 35 737 tons (surpassed only by the liner Queen Mary) necessitated a 13ft wide slipway, the world's largest. The keel of a third vessel, Shinano, later converted to an aircraft carrier while building, was laid in Yokosuka Navy Yard on 4th May 1940. These were the only ships of the class to be launched.

A striking feature of these ships was the great width of her beam 127ft 8in. There was a need for the shallowest possible draught in Japan's coastal waters. Fully loaded, displacing 72 809 tons, they had the relatively shallow mean draught of 35ft 6in. Vital machinery was crammed into a length representing only 53.5 per cent of her total waterline; achieved by arranging the 12 x 13 500hp boilers in four rows of three, each headed by and linked to one of the four turbines.

This area was protected by 16inch plates of Vickers armour, the largest weighing 70 tons. Side armour extended all the way from the 7 inch armoured deck down to the bottom hull plates. Sloping slightly outwards to minimise shell impact. The ships had two rudders, provision of a second fairly late in building, perhaps influenced by the fate of the German battleship Bismarck in May 1941. The 16 inch plates could withstand an 18 inch shell hit from 13-18 mile ranges. The 7 inch deck was proof against anything under a 2 2001b armour piercing bomb dropped from 10 000ft.The heaviest armour of all, 22 inch front plates on the main gun turrets, could withstand an 18 inch shell travelling at 550ft per second.

Japan spent a vast amount of money on increasing steel production and developing hardening processes to make the ships supposedly 'unsinkable'. The total 23 500 tons of armour protection on Yamato was about 34 per cent of her total tonnage: they were the most heavily armoured ships ever built. Both ships could certainly take punishment and could most certainly hand it out. Their 18 inch guns threw 3 400lb shells (1 000lb heavier than 16inch shells) 25 miles. The triple turrets each weighed 2 775 tons. They were handsome ships with good handling qualities, a comparatively small turning circle and a freedom from excessive heel. The ships had air-conditioned officers' cabins and ample crew quarters designed for a two thousand two hundred complement, but more often housing a wartime two thousand five hundred. In comfort Yamato was reckoned inferior to Musashi which sailors nicknamed 'The Palace'.

Both ships were launched as secretly as they had been built. Men working on Musashi were not allowed to leave Nagasaki Yard before the launch; they worked a final 24-hour shift to ready-her, while troops sealed off the yard from Nagasaki city. The Imperial Navy's officers, like most contemporary naval officers, still saw battleships as the major striking force, with carriers in a secondary role.

On 12th February 1942, Yamamoto hoisted his flag in Yamato, the new flagship of his Combined Fleet. As she lay in Hiroshima Bay, the C-in-C called senior officers aboard to decide Japan's next move. The decision was to capture Midway atoll, a move that Yamamoto hoped would lure the US Pacific Fleet out to battle, and destruction. This attack was considered all the more urgent after Doolittle’s raid in April. However, with the cracking of Japan's top-secret naval code, Nimitz was able to establish where and when the attack would come. It would be in early June.

Nirnitz's advance knowledge gave him a clear picture and, from his HQ in Pearl Harbour. He exerted effective overall command. Unlike Yamamoto, keeping radio silence in Yamato some 10 hours behind his carriers: Lacking radar, three carriers were surprised and sunk whilst planes jammed their decks. A fourth was sunk the next day. Yamamoto displayed unwonted emotion on hearing of the mortal damage inflicted. Wary American manoeuvring, ruled out a night action: leaving the Japanese commander to consider the risk of a daylight attack without air support. The risk was too great. Shadowed by US aircraft, Yamamoto led his force back to Japan, spending the voyage in the seclusion of his cabin. Worse than the loss of four carriers was losing 250 aircraft with most of their highly trained crews.

However, Imperial Headquarters had not lost faith in the battleships. Late in August, Yamamoto's flag flew in Yamato as she headed a strong force bound for Truk atoll, from which the Navy was to support the Army's struggle for Guadalcanal in the Solomon Islands. Musashi, having joined Yamato at Truk replaced her as flagship. A top-secret cable reached Major Mitchell, commanding No 339 Fighter Squadron on Guadalcanal, at 17 00 hours on 17th April, 1943. It came direct from Navy Secretary Frank Knox in Washington, and it told Mitchell that Naval Intelligence had decoded the next day's itinerary for Admiral Yamamoto.

The admiral and his staff would be flying from Rabaul to Bougainville in two 'Betty' bombers escorted by six Zero fighters, and would land at Kahili airfield at 09 45 hours. Knox ordered that Mitchell's P38 Lightning fighters 'must at all costs reach and destroy Yamamoto and his staff'. Bougainville was 500 miles away to the north-west- beyond the P-38s' range. But Knox had already organised fuel drop-tanks to be flown in from New Guinea. These arrived at Henderson Field at 21 00 hours in torrential rain. Mitchell and his pilots spent the night preparing their planes. Haggard and unshaven, 16 pilots took off at 07 20 hours.

They raced just above wave height for 2 hours, sighted the island at 09 35 hours and were busy gaining height to look for Yamamoto's flight when one pilot broke radio silence to announce briefly: 'Eleven o'clock'. There, sure enough, above and slightly left, was the target. The pilots ditched their drop-tanks and climbed to intercept. Lieutenant Lanphier had just got one 'Betty' in his sights when three Zeros came at him. He turned to meet them, fired a burst, and then saw the 'Betty' below at tree-top level. Diving at 400 mph, he fired a long burst into it. One wing and engine burst into flames and the bomber fell into the trees and exploded.

Lanphier had got Yamamoto, though the Americans could not be sure until Lieutenant Barber downed the second 'Betty' - the admiral had to be in one of them. All but one P-38, shot down by the Zeros, made it back to Henderson for a very quiet celebration. The coup was kept top secret so that the Japanese would not realise that their code had been broken. At the end of April 1943, a small white box was carried aboard Musashi, carrying the ashes of Admiral Yamamoto. On return to Japan on 21st May, headed by the Emperor himself, naval officers trooped aboard to pay their last respects. On Yamato, they found a poem by the Admiral. It began: 'So many are dead, I cannot face the Emperor, soon I shall join the young dead soldiers'.

After a spell in dry-dock at Kure, Yamato and Musashi joined the new C-in-C, Admiral Koga at Truk in the autumn of 1943. Yamato's first 'action' came late in December, as she prepared for Operation Ro, an assault on the central Solornons. As she entered Truk anchorage, a single torpedo from the US submarine Skate struck her aft on the starboard, pushing in the heavy side armour more than 3ft and buckling its brackets. Yamato shipped 3 000 tons of water, and was not operational until April 1944. Meanwhile Musashi joined her on the casualty list. Koga left Truk for the Palau islands with Musashi as his flagship; US carrier planes struck at Palau while 7 submarines ringed the islands to intercept ships flushed out by air attacks. On 29th March, the submarine Tunny torpedoed Musashi's port bow. Koga ordered her back to Japan and himself boarded an aircraft and disappeared without trace.

Vice-Admiral Ugaki, commanding the 1st Battleship Division (Yamato, Musashi, Nagato), flew his flag in Yamato. His force made its base at Tawi-Tawi, off NE Borneo. In May-June 1944, Ugaki's battleships were ordered to the Philippine Sea. Here, it hoped to destroy the American fleet 'with one blow', but the blow was never struck and battleships played no part in the campaign which crippled Japanese naval airpower. Three carriers went down and almost 500 aircraft and their crews were lost in 'The Great Marianas Turkey Shoot' of 19th June. Soon, the Philippines were threatened, while Yamato and Musashi, the hashira ('stay-at-home') fleet, as other snips' crews began to call them, were back in Japan.

For Yamato and Musashi, the build-up for the Philippines began in July 1944 when, after at last acquiring radar and radar-directed fire-control for their great guns, they underwent intensive training. The battleships resumed their role as the main striking force; Japan's carriers could no longer spearhead a battle. Therefore, they were sent north of Leyte Island, the Japanese carriers were to draw off American air cover and give battleships a chance against the

vulnerable American landing forces. On 18th October 1944, being informed of the initial landings in Leyte Gulf, Imperial Headquarters ordered Operation Shol (Victory) to begin. The 2 leviathans sailed with 3 other battleships, 12 cruisers, and 15 destroyers comprising Kurita's 1st Striking Force.

Early on 23rd October, off Palawan island, US submarines sank two of Kurita's heavy cruisers, one flying Kurita's flag. In the confusion of anti-submarine action, ten hours passed before Kurita could join Ugaki aboard Yamato and resume command; by then three US carrier task groups had regrouped. Determined to rendezvous with two other squadrons in the Sulu Sea, Kurita pressed on without air cover, telling his staff: 'It would be shameful for the fleet to remain intact while our nation perishes, you must remember that miracles do happen". But he would never keep his appointment, the other forces were annihilated in or fled from Surigao Strait on the night of 24-25th October, and no miracle would save Musashi, main target of American aircraft for the next five hours.

At 10 26 hours, 12 Curtiss Helldiver bombers, 12 Grumman Avenger torpedo planes and 21 Grumman Hellcat fighters hit Kurita's force. The Japanese ships threw up a fierce barrage, knocking down 2 Avengers, but the Americans pressed home attacks on Yamato and Musashi. Bombs made little impression on their armoured decks; torpedoes would prove more effective. During the first 20 minutes Musashi took 4 torpedoes on the port side and 1 to starboard. But now the design proved its intrinsic worth: Musashi stayed on course without apparent difficulty. A second strike of 42 aircraft arrived around noon. Again Musashi bore the brunt, taking two bombs and two torpedoes, and began to show signs of slowing down. After a third strike by 68 aircraft at 13 25 hours, Musashi's speed dropped to about 20 knots. She had taken 9 torpedoes: her starboard bow holed into which water poured. Yet counter flooding kept her under way with only a slight list to port, while 7 hits and some 15 near-misses from bombs did little structural damage. Yamato took two more bombs without effect. Many of the attackers were launched as quickly as possible carrying only 500lb bombs.

Musashi kept going, but now her crew knew she was in bad shape. The AA gunners were ineffective, and Rear Admiral Inoguchi at first refused to allow the 18in guns to fire sanshiki-dan ('case-shot, with a 'shotgun' scatter of 20mm incendiary projectiles, supposedly effective over several thousand yards against aircraft) for fear of barrel damage. By early afternoon, as Musashi's bow sank lower and she began to fall behind, it became obvious he must change his mind if she was to survive. By 15 00 hours, after another 30 plane strike was not inhibited by

sanshiki-dan. Musashi's speed had dropped to 12 knots. Kurita, about to reverse course hoping to lose the attackers, ordered her to drop out of formation. Only one cruiser remained with the stricken giant when more than 100 aircraft struck in wave after wave from 15 15 hours.

The death blows were dealt by 12 Hellcats, 9 Helldivers with 1 000lb bombs and 8 Avenger torpedo planes from Enterprise. They found Musashi well down by the bows, staggering along at 12 knots and leaving a broad wake of oil. As the Helldivers plunged, Hellcats hammered her decks with 0.5 machinegun fire and 5inch rockets. Eleven more bombs reduced the already battered upper works to twisted wreckage, and a low-level torpedo attack ripped her apart, all eight pilots claimed hits. At 16 50 hours, when the planes turned away, Musashi was listing 15° to port, her bows under water, and making only 6 knots. Admiral Inoguchi, mortally wounded, wanted to beach her on Sibuyan, but she was now so far over that use of the rudder risked an immediate capsize. Calling his remaining officers together, Inoguchi gave his sword to a young ensign, giving another a letter asking the Emperor's forgiveness. At 17 50 hours, the battle-flag was lowered and given to a strong swimmer, as was the Emperor's portrait. Abandon ship was ordered, but when Musashi rolled over to port and sank at 19 25 hours. Captain Kato, who had lashed himself to the compass binnacle, and one thousand and twenty three of her two thousand four hundred strong crew were still aboard. The battleship had taken between 11 and 19 torpedoes and at least 17 direct bomb hits. Kurita's ships had only downed 30 of their tormentors.

Although Musashi's sacrifice had saved all but one of Kurita's 28 other ships from significant damage, his reversal of course lent weight to American pilots' reports that he was retreating with heavy losses. The aircrews cannot fairly be blamed for an over-optimistic verdict, or for concentrating on a single prestige ship. But Admiral ‘Bull’ Halsey would not escape criticism: at 19 50 hours, believing that Kurita was finished, he led 15 fleet carriers and eight modern battleships on a chase after Ozawa. This left San Bernardino Strait unguarded, with only older battleships and light carriers to cover the landings.

At 06 45 hours on 25th October, having reversed course again and cleared San Bernardino Strait at night, Kurita made contact with the 6 escort carriers, 3 destroyers and 4 destroyer-escorts of Rear Admiral Sprague's 'Taffy 3' group. But instead of sending light cruisers and destroyers to make torpedo attacks, while manoeuvring his big ships into position. Kurita ordered 'General Chase'. At 06 59 hours, Yamato's great guns spoke in anger for the first time, at a range of 20 miles.

In spite of confusion among Kurita's ships, their gunnery was excellent. As Sprague ordered his carriers to make smoke and run, sending out a 'May Day' call in clear language, multi-coloured marker dyes from the Japanese shells blossomed near his vulnerable 'flat-tops'. A rain squall hid them for 10 precious minutes as they worked up speed to launch aircraft, Japanese radar proving inadequate, but at 07 16 hours the rain lifted. Desperate to buy time, Sprague's 7 destroyers raced towards a Japanese battle line that outgunned them by more than 40:1, weaving between shell splashes and closed to under 10 000 yards before launching torpedoes. The Japanese cruiser Kumano took crippling hits, while the American destroyer Heermann sent a torpedo spread at Yamato.

Swinging away, the Japanese giant found herself between torpedo tracks heading for her stern. She was forced to run at full speed out of the action for 10 minutes. By 07 42 hours, when the destroyers launched a second attack, Sprague's planes were up, swarming to the attack. Such determination seemed to confirm to Kurita his mistaken belief that he was engaging the heavy carriers of Halsey's fleet. At 09 15 hours, when 3 US destroyers were sunk, 1 carrier ablaze, and Japanese cruisers within 10 000 yards of the remainder, Kurita ordered the battle to be broken off. Yamato and her consorts fled back to Brunei, harassed all the way, although 2 more bomb hits did no more significant damage than the 104 rounds of 18inch shells she had expended against Sprague's ships. Heavy air attacks soon forced a withdrawal from Brunei; on 23rd November 1944, Yamato came home to Japan.

In the Battle of Leyte Gulf, Musashi had proved what tremendous punishment the class could take and still stay afloat. Musashi had been singled out as the main target for American air attacks as Kurita's battle fleet struggled through the Sibuyan Sea. Plastered by bombs and ripped by repeated torpedo hits, she had refused to sink, and her expert crew kept her afloat by skilful counter-flooding for hours until the end

But the biggest conversion job in the Japanese carrier programme was that of the giant Shinano, originally the third Yamato-class of the super-battleships. Shinano's whole story was one of monstrous error and wasted effort much like the giant Japanese 1-400 submarines. To start with, argument raged for weeks over what sort of aircraft-carrier she should be: an orthodox carrier or a giant floating depot ship and mobile base, carrying no aircraft of her own but able to supply and equip and provide an additional flight deck for an entire carrier fleet. The final result was a compromise. Shinano would be a carrier supply ship, but she would also have a few fighters of her own for self-defence and a hangar for storing them. This caused immense

difficulties, because Shinano's hull had been completed up to the main deck by the time of the decision to convert her. The work crawled along as slowly, in fact, as did that on Germany's only aircraft-carrier, Graf Zeppelin in a dreary stop-go rhythm. When the builders were finally galvanised into an all-out effort, after the defeat in the Philippine Sea, it was too late. All the reserves of' trained aircrew had been whittled away to the point of extinction. Nevertheless, the work on the useless giant moved to completion and Shinano was ready for service in November 1944.

She was the biggest aircraft-carrier in the world, and the best protected. Her armoured flight-deck stretched 840 feet by 131 feet. She could steam at 27 knots, she bristled with defensive armament, and she could carry 47 aircraft. At last, the backbone of Japan's new carrier fleet was finished - but the carrier fleet did not exist. There were carriers; there were aircraft; but there was little or no fuel for either, and certainly no trained aircrew. Shinano was, in fact, an awe-inspiring but thoroughly useless white elephant. Shinano had begun and ended a career as inglorious as any in naval history. Shinano mounted a formidable AA battery of 16 x 5in guns, 145 x 25mm and 336 x 5in rocket launchers, and with her multiplicity of watertight compartments she was deemed unsinkable. And her end was little short of absurdity. On November 29th 1944, she left Yokosuka for a brief shake-down cruise, escorted by three destroyers. She had not been at sea 24 hours, and still within sight of land, when she was caught by the American submarine Archerfish.

The submarine Archerfish’s radar picked up Shinano and her 3 destroyers at 20 48 hours as they moved down the coast. Surfacing, the submarine took up a 20 knot chase in the darkness, able to keep in touch only because the ships zigzagged as an anti-submarine measure! At 03 00 hours on 30th November, a sharp change of course by Shinano made her a perfect target, broadside on to Archerfish at 1 400 yards. Commander Joseph Enright fired a full spread of six 21inch torpedoes at 03 10 hours. At least four struck the huge carrier. But Musashi’s ordeal had shown what punishment this class of ship could take, and although he could easily have made harbour, or at worst beached his ship, Captain Toshio Abe ordered course to be held at 20 knots. For seven hours water poured in, flooding ‘watertight' compartments and springing badly welded hull members. Too late, full peril was realized. At 10 55 hours, Shinano rolled over to starboard and sank stern first, taking down the Captain and five hundred of his one thousand four hundred strong crew. Her life as an operational warship had lasted only 17 hours.

Shinano was not vitally damaged at all by Archerfish's torpedoes and could still make 18 knots. But her inexperienced crew neglected practically every damage control rule in the book. The waters rose and spread from compartment to compartment; she kept on her course at full speed; and her captain would certainly have been court-martialled for gross negligence if he had not gone down with his ship, 7 hours after being torpedoed.

Early in 1945, the Imperial Navy's surviving warships swung at anchor in home waters, lacking fuel or air cover for effective sorties. At Imperial Headquarters, the Army angrily demanded that the Navy, in particular Yamato-'that floating hotel for idle, inept admirals', match the self-sacrifice of kamikaze flyers, submariners and the island garrisons fighting to the last man.

When the Americans cornered the garrison at Okinawa. Admiral Toyoda, could resist no longer. He must throwaway as many ships as could still be fuelled, Yamato among them, in an empty gesture to satisfy national honour and as an inspiration to the civilian millions soon to be called upon to make the final suicidal stand on the beaches of the homeland. On 5th April 1945, he issued orders for Operation TenGo. Vice-Admiral Ito's 'Special Sea Attack Force' (Yamato, the light cruiser Yahagi and 8 destroyers) was, in Toyoda's words, to make “the most tragic and heroic attack of the war”. In support of a massive Kamikaze effort, the ships were to sail for Okinawa; draw off air cover from the landing areas; smash through the US Navy's screen; run aground and as armoured citadels hammer enemy occupied areas until ammunition was exhausted. Then their crews were to go ashore and fight to the death.

With fuel for a one-way trip and magazines crammed with more than 1 000 rounds of 18inch shells, Yamato sailed at 15 00 hours on 6th April 1945. Around 18 00 hours, shortly before clearing Bungo Strait, while the crew answered a patriotic exhortation with banzai for the Emperor, US submarines Hackleback and Threadfin sighted them. The US submarines flashed a warning to the fleet. The Japanese squadron had barely cleared Japanese territorial waters before it was spotted by American submarines. Three carrier task groups moved northeast into position off Okinawa, with orders for a dawn reconnaissance.

At 08 32 hours on 7th April, a scout plane picked up Yamato and her escort heading SW at 22 knots. Ordering battleships to “stand ready for any eventuality north of Okinawa”, Admiral Spruance told Vice- Admiral Mitscher: “You take them”. Between 10 00 hours and 11 00 hours, a dozen carriers from his Task Force 58 flew off 386 aircraft: 180 Hellcat and Corsair fighters, each carrying three 500lb bombs; 131 Avenger torpedo planes; and 75 Helldivers, each with one 1 000lb bomb and two 250 pounders.

Next morning, 2 Martin Mariner flying boats sighted the Japanese squadron at 10 14 hours, just as it swung south to within 300 miles of Okinawa. The 2 aircraft were screened from Yamato by low cloud and frequent showers, while they guided in the carrier planes. Apart from two seaplanes that remained unlaunched aboard Yamato and Yahagi, no Japanese aircraft were to be seen. At 12 10 hours, the Japanese destroyer Asashlmo, which had dropped back with engine trouble, flashed a brief warning as around 100 aircraft found her. At 12 20 hours, Yamato's radar located the first attack wave 18 miles to port. At 12 32 hours, about 200 planes were in sight at 13 miles range. The Japanese had the weather squalls and low clouds-on their side, but little else. The Special Attack Force had no fighter cover whatever and the American bombers were able to make almost unimpeded practice runs as repeated waves swept in to the attack. The ring of Japanese destroyers soon broke up under the stress of constant manoeuvre to avoid torpedoes.

The first wave struck at 12 41 hours, as Yamato increased speed to 30 knots. With only 3 000ft cloud ceiling, the planes came down in small groups to make low-level attacks. Yamato's great guns soon fell silent; their blast made it impossible for gunners to operate her massed 25mm batteries, but a heavy barrage still met the Americans, to little avail. By 12 48 hours one destroyer was sunk, Yahagi was crippled and Yamato had taken two bombs amidships as well as a torpedo in the port bow. Two more torpedoes struck there minutes later. While bombs silenced more of the battleship's AA guns. But Yamato, taking water and listing slightly to port, was still full of fight when a strike of 120 planes arrived at 13 00 hours. In less than 15 minutes, five more torpedoes ripped open Yamato's port side, while bombs and machine-gun fire silenced almost every remaining gun. Soon the list to port was too great for the damage control tanks to correct. To bring his ship back on an even keel, Commander Ariga ordered the flooding of the lowest starboard compartments, the engine and boiler rooms: Several hundred men drowned or were scalded to-death at their posts as the sea rushed in. The cruiser Yahagi now sank after taking seven torpedoes and 12 bombs.

From 14 00 hours onwards, aircraft from Intrepid and Yorktown closed in for the kill. Yamato lay over at 35°, creeping at 7 knots in a circle with rudder jammed hard aport and only one working pair of propellers. Few guns spoke from her shattered deck. All external and internal communications were severed. The sick bay was gutted, doctors: orderlies and patients all dead. Coming in on the starboard side at the head of six Avengers from Yorktown, Lieutenant Thomas Stetson saw that Yamato's hull lay exposed beneath the armoured belt. At least five of the Avengers' torpedoes ran straight. The last struck home at 14 17 hours.

Aboard the doomed battleship, Admiral Ito ordered the crew away at around 14 05 hours, shaking hands with his officers before retiring to his cabin to face death alone. Ariga saw to the safety of the Emperor's portrait, before having himself lashed to the compass mounting. The ship now listed so steeply that her battle-flag only just cleared the wave tops. But of more than two thousand seven hundred men aboard, only about three hundred had left before the sudden end. As the last torpedo struck, the remaining shells, torn lose in Yamato's magazines by the list, set off a chain of internal explosions. At 14 23 hours, with a massive eruption of orange-brown smoke and flame, the last of the Japanese 'super-ships' rolled briefly upright and then slid quickly beneath the waves. She had taken at least 10 torpedoes, 7 direct hits from bombs and innumerable near-misses. According to Yahagi's captain, the survivors in the water, "gave Yamato a last banzai as she disappeared: Then, while American machine-guns ripped the water all around, they began to sing the Japanese anthem".

Yamato's sacrifice was in vain; as wasted as the millions of dollars and years of effort Japan had squandered producing Yamato, and her sisters. The day of the battleship was over before they were launched. Such was the Battle of the East China Sea on 17th April, 1945. It was the end of the Dreadnought age-the last time that a battleship was sunk by enemy action on the high seas. The wheel had indeed come full circle since Pearl Harbor, when the superb Japanese carrier arm had proved the vulnerability of the battleship once and for all. Yamato's sacrifice was totally useless; she had never even sighted Okinawa, let alone taken any pressure off the gallant Japanese garrison there. On the Japanese side of the ledger there was only one completely insignificant flicker of success: a kamikaze hit on the American carrier Hancock.

Cowering in the Japanese home ports lay the remnants of the Imperial Navy. At Yokosuka there was the battleship Nagato, in her heyday the strongest battleship in the world with her 16-inch main armament. Her last action had been Leyte Gulf, where she had escaped the holocaust of the battleships. Now in the summer of 1945 she was inoperative, inglorious, with her funnel and

foremast removed to assist camouflage. The rump of the battle fleet lay at Kure, Japan's great naval base. There were the Ise and Hyuga, absurdly converted to seaplane carriers by the removal of their after turrets. With equal absurdity they had been classified the 4th Carrier Division of the 2nd Fleet in November 1944. In March 194 they had finally been taken off the active list and now served as A.A. batteries. Also at Kure was the Haruna, the last survivor of the 'Kongo' class battle-cruisers built on the eve of World War One. With the Kongo's Japanese designers had shown the world that they had seen through the inherent weaknesses of the battle-cruiser concept by specifying their order for fast battleships; and the Kongo's had been extensively reconstructed between the wars. Another genuine museum-piece at Kure in 1945 was the old target-ship Settsu, whose construction had helped place Japan fourth after Britain, the United States, and Germany as a Dreadnought naval power.

Mobility and hitting-power are the prerequisites of a carrier force, and by 1945 the Japanese carrier Force had no fuel and no aircrew. This in turn meant that the surviving units of the Imperial Navy were now finally denuded of their air umbrella and were, from a strategic point of view, little more than floating scrap iron. To the Japanese high command, however, it was unthinkable that the Emperor's last warships should be bombed to destruction in their home-ports, or hunted down independently at sea. The kamikaze strategy was therefore applied to the Japanese Navy, but, as with the Army and Navy air forces, the problem remained one of materiel, not men. There were thousands of eager volunteers willing to show their veneration for their Emperor by immolating themselves on an enemy carrier and taking as many Americans with them as possible. The difficulty was in getting them there. The Navy, developed two main kamikaze weapons of its own: kaiten and explosive speedboats. However, the best suicide weapon remained the aircraft, plummeting down on its target from the skies.

The ambitious 'SHO' plan which had thrown the massed strength of the Combined Fleet against the Americans at Leyte had been motivated by the kamikaze mentality: to do as much damage as possible with inferior resources. And the same held true of one of the most bizarre episodes in naval history: the suicide sortie of the Yamato.

Japan's defensive strategy was based on the idea of 'Dunkirking' the spearhead troops, once they had got ashore, and disrupting the Allied offensive plan by raising as much havoc as possible. And it was to this end that the 'Special Sea Attack Force' was formed. Seven Japanese aircraft-carriers were also in home waters. First among them was the little Hosho , the first carrier in the world to be designed as such from the keel up, which had been launched after

World War One. When she served as fleet carrier training ship, most of the Japanese Navy's crack aircrews learned their trade aboard her. She had survived Midway as Yamamoto's last serviceable carrier and was still in service in 1945. The other six carriers, Ibuki, Amagi, Katsuragi, Kaiyo, Ryuho, and Junyo; represented the losing struggle to restore carrier protection and hitting-power to the Combined Fleet. Apart from destroyers and submarines still in service, the only other major units of the Combined Fleet in Japanese ports in 1945 were six cruisers.

With American carrier planes now able to range at will over the Japanese homeland, it was only a matter of time before these sorry survivors were singled out for destruction. Admiral Halsey planned it personally: it was to be a formal revenge for Pearl Harbor, an all-American operation without the British Pacific Fleet. It took the form of a fearsome three-day blitz on the Japanese naval bases, concentrating on Kure. Between July 24th and 26th 1945, the American carrier forces struck round the clock. In those hectic days they sank the Amagi, Ise and Hyuga, Haruna, Settsu, and five cruisers, effectively destroying Japanese hopes of forming a possible suicide squadron from their last heavy warships. If any single date is required for the formal annihilation of the Japanese fleet, it may be set as July 24th26th 1945.

Although the British did not participate in the mass attacks on the Japanese naval bases, they were nevertheless active during this final phase. Ranging over the Inland Sea, British carrier planes sank two frigates and several other small fry, and also claimed a hit on an escort carrier. The biggest feather in the caps of the British, however, was earned thousands of miles away: in a dramatic and successful midget submarine attack on the port of Singapore.

At Singapore lay the Japanese heavy cruisers Takao and Myoko, both of them marked down for attack by the Submarine Flotilla of the British Pacific Fleet. Two XE-craft (improved versions of the midget submarine which had crippled the German battleship Tirpitz in her Arctic lair in late 1943), were detailed for the job: XE-1 (Lieutenant Smart) and XE-3 (Lieutenant Fraser). On 30th July, 1945, the two midgets were on their way to the approaches to Singapore Roads, towed by their parent submarines: Spark and Stygian.

In the history of submarine warfare this attack is particularly interesting because of the use of the echo depth finder in navigating to the target. By the early hours of 31st July, set as the day for the attack, XE3 was manoeuvring up the Johore Strait at 30 feet. The boom was safely passed at 10 30 hours, and the target, Takao, was sighted at 12 50 hours. As XE-3 closed in on her victim there was a disconcerting moment. As Fraser put it, "I was very upset to see a motor

cutter filled with Japanese troops only about 30 yards from my periscope". XE-3, however, remained undetected as she crawled towards Takao across the uneven harbour bottom, fetching up against the hull of the Japanese cruiser with a loud clang at 14 42 hours.

With great daring, Fraser decided to make his attack with XE-3 wedged squarely beneath Takao's hull. The attack used two weapons: limpet mines, attached to the enemy hull by the XE-craft's diver, and fused explosive charges, released from the midget's hull from inside. Operating with great difficulty in the murky waters of the harbour, diver Leading Seaman Magennis attached six limpets to Takao's bottom. It was a long and exhausting job, for he had to scrape off patches of weed and barnacles to get the limpets to stick. After placing the mines and returning inside XE-3, Magennis had to go back outside and release the starboard explosive charge, which refused to detach itself. Tired though he was, Magennis had no hesitation in immediately volunteering for this strenuous and extremely dangerous job. As Fraser's report has it: "He went on oxygen again at 16 25 hours and made his exit to the casing with a large spanner in his hand. After seven minutes he managed, by much banging at the carrier and levering at the release pins, to get the carrier away".

With the explosives safely placed in position, Fraser turned to the task of wriggling XE-3 clear of her victim and retreating to the open sea for the rendezvous with Stygian. Despite several harrowing moments the retreat passed off safely. The boom was passed at 19 49 hours and at 21 00 hours, XE3 was able to surface and proceed down the Johore Strait. Rendezvous was safely made with Stygian at 23 45 hours.

Smart, in XE-l, had had bad luck from the start of the approach. One mishap after another had combined to delay his attack so badly that he risked being caught inside the boom if he had pressed on to his own target. Smart therefore took the extremely brave decision to attack Fraser's target as well and take the risk of being blown up by the detonation of XE-3's limpets and charges. The possibility of this was heightened by the fact that the detachable charges were fitted with disturbance fuses, and XE-l would stand a likely chance of setting them off. But the calculated risk taken by Smart paid off; he dropped his charges and retreated safely. Fraser and Magennis received the Victoria Gross for their attack, Smart the Distinguished Service Order.

Takao, left with two sets of explosive charges and six limpet mines, the resultant explosion effectively destroyed her as a fighting ship by blowing the bottom out of her. The post-war fate

of the Japanese warships which survived Halsey's Blitz of July 1945 was inglorious. Nagato, last of the battle fleet, was used as a target ship during the Bikini Atoll atom test in 1946, together with the cruiser Sakawa. The other cruisers and carriers were either used as targets, scrapped, or sunk at sea by the victors; the Americans in particular sank a hecatomb of surrendered Japanese submarines off Gato Island in April 1946.

The fate of the last vessels of the Imperial Japanese Navy was the grim end to a remarkable story. Japan's emergence as a modern power only dates from the last three decades of the 19th Century. By careful study of the best European models, she built a navy second to none in either materiel or fighting spirit in under 30 years. In that period Japanese naval designers not only participated in the birth of the Dreadnought era: they proved again and again that they could lead the world in laying down new concepts for the development of the fighting ship and the evolution of naval warfare.

What went wrong? It is now generally accepted that Japan's decision to go to war in December 1941 was a calculated risk, a gamble which came within an ace of success. But as far as the total defeat of her prime instrument of war in the Pacific - the Combined. Fleet - is concerned, several serious errors stand out. The first is that in 1941, the Combined Fleet was a contradiction in terms. Its carrier force was superb but the battle fleet-the big gun-was still looked to as the weapon which would bring decisive victory. Submarine strategy was totally misguided on the Japanese side, whereas the Americans used their submarines correctly and reaped the rewards. Above all, however, the Japanese naval strategists had to cut their coat according to their cloth: the one thing they could not afford was a war of attrition, and this they got. The Guadalcanal campaign, for example, cost them the equivalent of an entire peace-time fleet losses which could never be replaced. The very speed with which the Americans assumed the offensive in the Pacific, never to lose it, showed what a narrow margin the Japanese Navy had.

And the result was an unreal metamorphosis which led the Japanese into building huge white elephant like Shinano and the aircraft-carrying I-400 submarines. It saw the Combined Fleet change from an instrument of the offensive and of victory to a sacrificial victim whose purpose was only to stave off defeat. This process first became dominant at the time of the Marianas campaign in June 1944, and it led to the final destruction of the Combined Fleet. That there was great heroism among the men who took Yamato out on her last voyage cannot be doubted. But the former cold professionalism which had carried the Japanese Navy to its high tide of victory

in the summer of 1942 was gone. In ships, in men, and in men's ideas, too much had been lost in the disastrous naval operations in the Solomon Islands, at Midway, and in the battle of Leyte Gulf.

CHAPTER FIFTEEN

USS INDIANAPOLIS

When the Japanese attacked Pearl Harbor on 7th December, 1941, the heavy cruiser Indianapolis was undergoing training exercises close to Hawaii. Returning immediately to Pearl Harbour, the cruiser joined Task Force 11. In early 1942, Indianapolis sailed with the carrier USS Lexington and conducted raids in the Southwest Pacific against Japanese bases on New Guinea. Ordered to Mare Island, California for an overhaul, the cruiser returned to action on 7th August, 1942 and joined US forces operating in the Aleutians.

Remaining in northern waters, the cruiser sank a Japanese cargo ship on 19th February, 1943. That summer, Indianapolis supported US troops as they recaptured islands in the Aleutians. Following another refit at Mare Island, Indianapolis arrived at Pearl Harbour and was made flagship of Vice Admiral Raymond Spruance's 5th Fleet, providing fire support as US Marines prepared to land on Tarawa.

Following the US advance across the central Pacific, Indianapolis saw further action and supported US air strikes across the western Carolines. In 1944, the 5th Fleet provided support for the invasion of the Marianas and Saipan and bombarded Iwo Jima. Indianapolis then took part in the Battle of the Philippine Sea, before being sent to aid in the invasion of Peleliu that September.

After a brief refit at Mare Island, the cruiser joined Vice Admiral Marc A. Mitscher's fast carrier task force on 14th February, 1945. Steaming south, they aided in the landings on Iwo Jima. On 24th March, 1945, Indianapolis took part in the bombardment of Okinawa. A week later, the cruiser was hit by a kamikaze plane while off the island. Hitting Indianapolis' stern, the kamikaze penetrated through the ship's upper deck and exploded. After making temporary repairs, the cruiser limped home to Mare Island and underwent extensive repair to the damage, only emerging from dry dock in July 1945.

The USS. Indianapolis was destined to play a pivotal role in the ending of World War Two. Due to the ship's great speed as well as its proximity to Los Alamos, New Mexico (the location of the Manhattan Project), the Indianapolis was selected for a top-secret mission. She was tasked with transporting from San Francisco to the island of Tinian in the Marianas, a vital, piece of uranium 235, encased in a lead cylinder. The uranium was the catalyst for the reaction of the atomic bomb destined for Hiroshima. Three smaller parts had already been delivered, each on a

different aircraft. Any one of the smaller parts would be enough to prime the bomb but the larger piece was essential for effective detonation.

In the very early morning hours of 16th July 1945, shrouded in security and secrecy, but with a huge assembly of Admirals, Generals and many technicians at pier-side looking on, the atom bomb components were loaded aboard Indianapolis. Several large wooden crates were stowed in one of the ship's hangars, and placed under guard. Orders were given that should the ship come under attack and considered endangered, the crates were to be immediately thrown over the side. Even given the strangeness of this particular order, the nature of the cargo itself was kept secret from all aboard including Indianapolis' commander; Captain Charles McVay. Indianapolis sailed into history on that fateful morning.

The heavy cruiser steamed out of San Francisco Bay just after dawn on 16th July, 1945, wrapped in a heavy cloak of secrecy and headed for the Pacific Island of Tinian where American B-29 bombers were based. On board were some of the atomic bomb technicians. She steamed at high speed, unescorted, to the island, making record time by covering the 5 000 miles in ten days, which included a stop at Pearl Harbor for replenishment. She unloaded her lethal cargo on 26th July. Her mission accomplished, the warship, with one thousand, one hundred and ninety seven men on board, then began a journey into Hell that would end with the worst naval disaster in U.S. history.

On that same fateful morning, one of the newest, largest, and most technologically advanced attack submarines of the Japanese Imperial Navy got underway. It was the I-58, under Commander Hashimoto. His orders were to patrol the waters east of the Philippines; find and sink, enemy shipping. From Tinian, Indianapolis sailed south, made a brief stop to refuel and receive new orders at Guam (Headquarters for the Pacific Fleet, under the command of the Commander In Chief of The Pacific Fleet, Chester A. Nimitz), Her new orders were to sail to Leyte Gulf on the East Coast of the Philippines, some 1 500 nautical miles from Guam, through waters patrolled by Japanese submarines and infested with sharks, there to join with the battleship Idaho, for several days of gunnery practice and refresher training. The reason being, about four hundred of the crew were green sailors fresh out of boot training. From Leyte she was to rejoin the fleet off Okinawa for the expected invasion of Japan. According to the official record, a single coded message was sent from Guam to Idaho advising her of Indianapolis' orders. Reportedly, the radio message was garbled at the receiving end. Idaho didn't ask for a repeat of the message. Consequently they didn't know Indianapolis was on her way.

The Indianapolis did not have sonar to detect submarines. Captain McVay, had asked for an escort, but his request was turned down. The US Navy also failed to pass on information that Japanese submarines were still active in the area. Indianapolis steamed out of Guam on the 28th July. McVay planned a three day voyage to Leyte at an average speed of 15 knots and had only four of her eight boilers on line.

As the watch changed at midnight, Monday, July 29/30th, Indianapolis was now making 17 knots in a moderate sea with visibility poor but improving under overcast skies. The night was calm, and the moon had just slipped behind the clouds. Captain McVay felt the darkness would help conceal his ship if a submarine should happen upon her course, so he told the officer on watch that, at least for a while, he could steer a straight course rather than zigzag. The officers were relaxed. They had just carried out a sensitive mission to deliver a 'secret weapon'. They were unaware, of course, that they had just delivered the first atomic bomb in history.

At midnight, the moon reappeared. At precisely that moment, Captain Hashimoto of the Japanese I- 58 raised his submarine's long range periscope. The experienced commander couldn't believe his eyes. There, in his sights, was the Indianapolis, just 10 000 metres away. Three torpedoes were immediately fired at the cruiser. The first torpedo fired struck the Indianapolis toward her bow, killing many of her crew instantly. The second torpedo, which hit almost simultaneously, struck toward the centre of the ship, almost directly under the bridge, causing more casualties and completely cutting off communications with the bridge.

This was the mortal blow, igniting an explosion that almost broke the ship in two. It would take only twelve minutes for the ship to dip her bow, roll to port and slip beneath the sea. Captain Hashimoto, stated after the war that a third torpedo hit the Indianapolis, but her crew felt the impact of only the first two. When the first torpedo exploded at the bow of the ship, most of the sailors aboard the Indianapolis were sleeping. But not for long! Realizing what had happened, the men raced to the ladders to reach the upper decks. Moments later at the second explosion, sailors were thrown violently against the bulkheads; many were killed instantly.

The explosion knocked out all electric power aboard ship and any chance for an SOS. (Even though the radiomen on duty swore that at least three SOS messages had been sent before power was lost.) For many years it was believed the loss of electric power had prevented any SOS message from getting off the ship. However recent revelations would seem to support the radiomen. As fires raged below, the huge ship began listing onto its side. As it rolled, hundreds

of crewmen jumped into the water to escape the burning ship. The vessel was 610ft long, and still had four propellers turning.

Indianapolis' 17 knot forward speed through the water continued shipping thousands of tons of sea water through collapsing forward bulkheads. Sea water surged in through the gaping hole in her side. She began to go down by the bow and then to list to her port, side. Officers began to shout orders for all hands to abandon ship. By the hundreds they jumped into the ink-black, midnight sea, taking their burned and wounded shipmates with them. According to the survivors, Indianapolis rolled completely over to port and went rapidly down bow first, taking many sailors with her to a watery grave

In the 12 minutes it took the Indianapolis to go down, few boats or life rafts had been lowered, and many sailors hadn't even had time to grab a lifejacket. About nine hundred men, were left drifting in groups in the huge expanse of the Pacific Ocean. The nearest island was over 300 miles away. A few of those in the water were able to reach a raft or debris from the ship to cling to. Just as many, however, had neither raft nor life jacket and were forced to continually tread water to survive, finding relief only when a life jacket became available through the death of a shipmate. And beneath the waves, another danger was lurking. Drawn by the carnage of the sinking, hundreds of sharks from miles around headed towards the survivors. The sharks began attacking when the sun rose and continued their assault throughout the ordeal.

Huge sharks, up to 15 ft. initially fed off the dead bodies. But soon they came for the living, too. Some of the men would pound the water, kick and yell when the sharks attacked. Most decided that sticking together in a group was their best defence. But with each attack, the clouds of blood in the water, the screaming, the splashing, more sharks would come. In the clear water the men could see the sharks circling. Then, in a lightning strike, one would come straight up and take a sailor and take him straight down.

Due to the rapidity of the ship's sinking, life rafts which were designed to float free of the ship, failed to do so. Fuel oil from the ships ruptured tanks coated the sea and the men, making most violently ill. When the sun rose on that first day, there was reason for optimism. After all, the crew knew they were due to join up with USS Idaho the next day for gunnery practice. Surely they'd be missed and search missions would immediately be mounted. However, such was not the case, and for the next four and a half days, the men of the Indianapolis would know terror, thirst, hunger and despair on a massive scale. Many would give up the struggle and slip quietly

beneath the sea, never to be seen again by their shipmates. Some prayed, some cursed. It would be the quintessential struggle of man against nature.

One by one sharks began to pick-off the men on the outer perimeter of the clustered groups. Agonizing screams filled the air day and night. Blood mixed with the fuel oil. The survivors say the sharks were always there by the hundreds swimming just below their dangling feet. It was a terror filled ordeal, never knowing if you'd be the next victim. By the third day, lack of water and food combined with the unrelenting terror began to take its effect on the mental stability of the men. Many that had taken in sea water began to hallucinate, become delirious and slowly go mad. Imagining secret islands just over the horizon, or that they were in contact with friendly submarines coming to the rescue. Fights broke out and hope faded. By Wednesday evening, the third day, survivors estimate that only four hundred or so were still alive, the dead littered the surface of the sea.

The sharks, though, were not the only killer. Under the scorching sun, day after day, without any food or water, men were dying from exposure or dehydration. Their lifejackets waterlogged, many became exhausted and drowned. When it got dark they would get so cold, their teeth would chatter. Struggling to stay alive, desperate for fresh water, terrorised by sharks. As each day and each night passed, more men died.

As the ship was operating on a secret mission, no notification had been sent to Leyte from Pacific H.Q alerting them that Indianapolis was en route. As a result, it was not reported as overdue. Though three SOS messages were sent before the ship sank, they were not acted on for various reasons. For the next four days, Indianapolis' surviving crew endured dehydration, starvation, exposure, and terrifying shark attacks.

At 10 25 hours, Thursday morning, 24 year old Lieutenant Chuck Gwinn, piloting his Lockheed Navy Ventura PV-1 bomber based on the island of Palau, about 300 miles south of the location where Indianapolis went down, was on a routine antisubmarine patrol. It was his second flight of the day; earlier, having returned to base for maintenance. On that second patrol, Gwinn was in the rear of the plane working with his crew. He was leaning out of the plane, when he chanced to glance down at the ocean, and changed the fate of three hundred and seventeen men. Gwinn had spotted a huge oil slick. Thinking the large oil slick indicated that an enemy sub had just submerged beneath his plane, he dropped down several hundred feet for a depth charge run. The bomb bay doors were opened, ready to drop depth charges on the suspected enemy

sub. Gwinn glanced out the window just as he was about to release his depth charges, and there, spread out over the ocean, were hundreds of delirious men waving to get his attention. Immediately Gwinn regained altitude and radioed his base at Palau. "Many men in the water." and gave his latitude and longitude. He orbited the location answering questions from Palau. Some hours were wasted in getting through to the bureaucracy, they had at first refused to believe him.

Initially, the men thought they'd been missed by the plane flying over. Then, just before sunset a large seaplane suddenly appeared, changed direction and flew over the group. Then, some three hours after Gwinn's first report, a Catalina PBY flying boat was eventually dispatched. At her controls, a 28 year old Navy pilot from Frankfort, Indiana named R. Adrian Marks. En route to the location reported by Gwinn, Lt. Marks overflew the USS Cecil Doyle, whose skipper was a close friend. Marks informed the skipper of his mission. On his own initiative, the Doyle's captain, Graham Claytor, disobeyed orders to proceed to Leyte Gulf in order to lend assistance. At this point, his fuel state near critical, Gwinn headed for his home base, little knowing the part fate had played in his life or the lives of three hundred and seventeen American sailors and marines. Arriving at the survivors' location, Marks dropped to about 100 feet above the surface of the sea while his crew began dropping rafts, and supplies. While this was happening, his crew informed him they could see men being attacked and eaten alive by sharks! Upon seeing these men under shark attack the crew voted to abandon standing orders prohibiting landing in open seas. This act of humanity is all the more remarkable when you realize Marks and his crew had no idea who these sailors might be; English, Aussies, Japanese or American.

Marks landed the PBY. (Years later Marks related he knew the day might come when he'd be forced to make an open sea landing, so he had planned for the eventuality. On that day he would put his theory into practice). In a daring manoeuvre, he landed between swells. Although many hull rivets popped out from the force of the landing, his PBY made it! He taxied his plane as close as he could to the first large group of men and immediately began taking survivors aboard. Some nearby survivors were so weakened by their ordeal, that when they slipped out of their life jackets, they drowned while attempting to swim to the plane. Learning the men were from Indianapolis, a thoroughly shaken Marks, frantically, and now in plain English, repeatedly radioed for help. The Cecil Doyle replied she was on the way. When the PBY's fuselage was full, the crew carried men onto the wings. All night long, Marks and his crew fought to get as many men as possible out of the shark infested sea. The wings' fabric covering was soon filled

with holes, and covered with survivors, tied in place with parachute cord. Adrian Marks and his gallant and courageous flight crew saved fifty six men that day. A record that has never been equalled for a sea plane of that size since!

Navy ships raced to the scene and began looking for the groups of sailors dotted around the ocean. Nearby ships rushed to the scene and began to pluck the sailors out of the water. A tally made at the completion of the rescue revealed that only three hundred and seventeen sailors of the original estimated nine hundred who escaped the sinking ship survived their ordeal.

Responding to Marks' calls for help, the destroyers, Cecil Doyle, (DE-368), Talbot, (DD-390) , and Dufilho, (DE-423), converged on the scene. The Auxiliary Ships Ringness, (APD-100) Bassett, (APD73), and Register, (APD-92) also came to the rescue of the remaining Indianapolis crew. By morning Lieutenant Marks' PB-Y was a floating hulk, and in no position to fly. The Cecil Doyle came along side and took off the rescued survivors. Marks stripped the plane of all instruments and secret gear, and transferred himself and his crew to the Doyle. He then requested her skipper to destroy his plane by gunfire, lest if fall into enemy hands. The Doyle trained her guns on the PB-Y's port side and successfully destroyed the plane.

Marine Detachments aboard U.S. Navy capital ships has been a tradition since the founding of the U.S. Navy. There were thirty nine marines aboard Indianapolis when she went down. Marine Detachments are the spearhead of the Ship's Landing party, the first ashore, the first to fight and die if necessity calls for it. Marine Detachments are the armed 'muscle' of the ship's Boarding Party, should the opportunity for boarding an enemy vessel present itself. They operate the Ship's Brig, and man several of the ship's weapons systems. They work and live side by side with the officers and sailors of the Ship's Company. They literally fight and die together. It was no less true aboard Indianapolis.

Of the thirty nine Marines aboard, only nine survived the Indianapolis sinking and the subsequent ordeal. Captain McVay recommended the Navy Cross, (posthumously), for Captain Edward L. Parke, USMC, and the Commanding Officer of the Indianapolis' Marine Detachment. Writing of Captain Parke, Captain McVay's recommendation read in part,"... For extraordinary heroism in rescuing and organizing a large group of men following the sinking of the USS Indianapolis... Finally collapsing himself from exhaustion. His unselfish conduct in the face of the greatest personal danger was outstanding and in keeping with the highest tradition of the Naval Service". Following medical treatment on Guam, the three hundred and seventeen weary,

but deliriously happy, survivors were returned to the US aboard the escort carrier, Hollandia, (CVU-97).

The Indianapolis was a very high profile ship, owing to her pre-war fame and her wartime service as the Flagship of Admirals Spruance and Halsey. Being the centre of attention in the Pacific; the media of the day, radio and press all strove to get reporters aboard Indianapolis to record the news. Young men just out of Annapolis all wanted to be assigned to Indianapolis. That's where the 'action' was, and consequently enhanced chances for recognition and promotion. Politically influential fathers pulled strings to get their sons assigned to the Indianapolis. When the ship was lost, these same influential families began to pressure the navy about the loss of their sons. The navy reacted badly. Admiral Earnest King then the Chief of Naval Operations ordered a Court Marshal for Captain Charles B. McVay.

The captain of the Indianapolis was among the survivors plucked from the sea. But Captain McVay's ordeal didn't end there. Looking for a scapegoat, the US Navy placed responsibility for the disaster on Captain McVay. He was accused of having made an error of judgment when he told the officer on watch that he could stop zigzagging, thus making the Indianapolis an easier target for the I-58. At McVay's trial, even the Japanese Captain Hashimoto was called to testify and stated that an evasive course would have made no difference.

On 19th December 1945 Charles Butler McVay III was found guilty of the specification of the first charge; hazarding his vessel by failing to zigzag. He was found innocent of the second specification; failing to sound a timely order to abandon ship. McVay's punishment was to be dropped 100 points on the promotions list. Effectively ending what had been by all accounts an absolutely brilliant naval career.

Following the proceedings, an unprecedented thing happened. Almost to a man, the officers sitting in judgment signed a petition asking the court to set aside the verdict in light of McVay's record. As Admiral King had retired in the interim, it fell to ADM Chester Nimitz to grant the petition of the court, and he set aside the punishment. He could not set aside the fact of the conviction. Admiral Nimitz restored Captain McVay to duty and posted him as commandant of the New Orleans Naval district where he was promoted to Rear Admiral, where he finished his career and retired.

Tragedy continued to stalk McVay even in retirement. What could only be termed 'hate mail' was constantly sent onto his home; he was the recipient of emotionally charged phone calls

from parents and loved ones of those who lost their lives in the tragedy of the Indianapolis. His wife contracted cancer and passed away within a few short years of their move to a new home in Litchfield Connecticut. Eventually the weight of loneliness and calumnious phone calls and mail took its toll on the man.

In the fall of 1968 Charles Butler McVay III, last Captain of the USS Indianapolis (CA-35) , stepped out on his front stoop, and using his navy issued service revolver, took his own life. The Indianapolis had claimed her final victim.

Laid down on 31st March, 1930, USS Indianapolis (CA-35) was the second of two Portland-class built by the US Navy. An improved version of the earlier Northampton-class, the Portlands were slightly heavier and mounted a larger number of 5-inch guns. Built at Camden, New Jersey, Indianapolis was launched on 7th November, 1931. Commissioned at the Philadelphia Navy Yard the following November, Indianapolis departed for its shakedown cruise in the Atlantic and Caribbean. Returning in February 1932, the cruiser underwent a minor refit before sailing to Maine.

After participating in a number of fleet training exercises, Indianapolis embarked President Roosevelt for a 'Good Neighbor' tour of South America in November 1936. Arriving home, the cruiser was dispatched to the West Coast for service with the US Pacific Fleet.

A solitary B-29, The Enola Gay, (A Boeing, super fortress four-engined, high altitude heavy bomber), a single bomb in its bomb-bay, headed for Hiroshima, Japan. Also aboard, were several of the 'brass' Indianapolis had transported from Mare Island to Tinian. These men actually armed the bomb en route to Hiroshima. History records the flight of the Enola Gay, and the end of conventional war as mankind had understood it. Aboard the Enola Gay was one of the atomic bombs delivered by Indianapolis destined to be dropped on Hiroshima. The Enola Gay, was named in honour of his mother by its pilot, U.S. Army Air Force Colonel Paul W. Tibbets. Even though the Indianapolis had been sunk on 30th July 1945, the navy did not release the news to the press until 15th August. The day Japan surrendered. News of the surrender all but overshadowed the loss of Indianapolis.