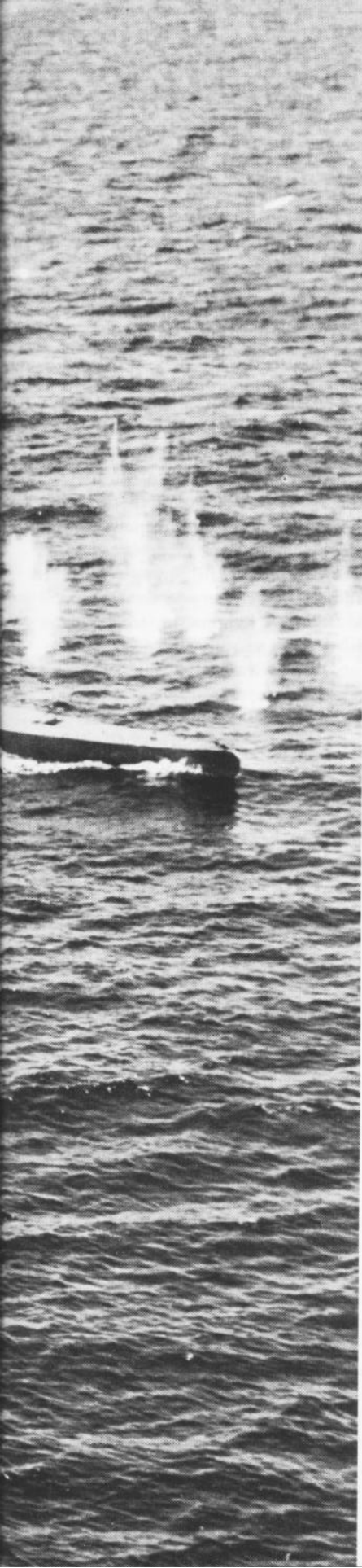


Air attack on U-118 (1943)





*A History of  
Sea-Air Aviation*

*Wings Over  
The  
Ocean*  
**part thirteen**

By John M. Lindley

The U.S. Navy airship program, practically non-existent after the crash of USS *Macon* (ZRS-5) in 1935, was drastically changed by the outbreak of war in 1941. When the U.S. went to war, the Navy had 10 airships (non rigid), only six large enough to use at sea. Qualified airship personnel numbered about 100 pilots and as many aircrewmembers. The U-boat threat brought about a rapid expansion of the airship program. In June 1942 Congress authorized the Navy to build a fleet of up to 200 non-rigid. Not all were built, but the Navy had 168 blimps (mostly K-type) by 1945. Similarly, the number of airship personnel burgeoned so that by 1944 the Navy had 1,500 qualified pilots, 3,000 aircrewmembers and an adequate number of ground personnel.

At the peak of their operations, Navy airships patrolled about three million square miles of ocean in the Atlantic, Pacific and Mediterranean. The bulk of this escort and patrol work took place along the Atlantic Coast north of South America, and in the Caribbean and Gulf of Mexico where blimps could follow the slow merchant convoys with no difficulty due to their speed range from 0 to 70 miles per hour. Even though these blimps rarely attacked U-boats, they were a valuable part of the antisubmarine team because they could alert more powerful surface forces to the presence of a submarine. Their constant surveillance of merchant traffic also forced the U-boats out of the coastal traffic lanes into the broader

and deeper ocean areas where they would be less vulnerable to surface attackers, but also where there were fewer merchant ships. Only once was there a gunnery duel between a blimp and a U-boat. On July 18, 1943, K-74 spotted a U-boat on its radar and surprised the submarine on the surface. In the resulting action between bombs and machine guns, the U-boat brought down the blimp with its deck guns when the airship's bombs failed to release. Later, the U-boat was sunk by surface forces, and the crew members of K-74 were rescued the next day.

Because Navy blimps usually did not get into combat against U-boats, there is no available count of the number of submarines sunk by them. Usually a blimp would guide other surface escorts to the area where it had discovered a U-boat or force the predator to retreat to the relative safety of the high seas. Despite this, proponents of the lighter-than-air program proudly claimed that no vessel was sunk by an enemy submarine during WW II while under escort by an airship. In addition to these escort and antisubmarine patrols, Navy blimps also performed valuable search and rescue, mine-sweeping operations in the Mediterranean, and other utility duties such as photo reconnaissance.

While the patrol bomber and the blimp operated from the skies against the U-boat menace, a new type surface ship, the escort carrier (CVE), made its debut in the Atlantic. The British first tried to take aircraft to sea with merchant convoys by mounting a catapult on the bow of a merchant ship. These CAM (catapult armed merchant) ships had limited usefulness. The single *Sea Hurricane* fighter which could be launched was able to intercept German reconnaissance aircraft spotting convoys for U-boats, but once its mission was completed, its pilot had to land ashore or parachute into the sea. Introduced in May 1941, CAM fighters did manage to shoot down six German long-range aircraft by the end of the year.

The CAM ships were the first step toward the development of the escort carrier. The first of these new warships

was a converted German ship which joined the Royal Navy in June 1941 as HMS *Audacity*. *Audacity* had a merchant hull (5,600 tons; maximum speed, 15 knots) covered by a 475-foot-long flight deck. She carried six Grumman *Martlet* fighters (export models of Navy's F4F) on her flight deck since she had no hangar. By keeping two of these planes in the air over a convoy and two more at the ready on her flight deck should a U-boat appear in the area, *Audacity* proved her worth in convoy runs between Gibraltar and England during September and October. Even after U-75 torpedoed *Audacity* on December 21, 1941 (at the end of a four-day running battle with a Nazi wolf pack), the ship had shown that this was the way to get aircraft to sea for convoy operations because 30 merchant ships made the trip to England safely at the

cost of the carrier and one destroyer. The Germans lost five U-boats and two reconnaissance planes.

By March 1943 escort carriers built in the United States and Great Britain began to have an impact on the Battle of the Atlantic. With a maximum speed of 18 knots, these carriers took the offensive against U-boats which were beyond the range of shore-based patrol aircraft. Sometimes escort carriers accompanied a merchant convoy, in the manner of *Audacity*, between England and the Mediterranean. Other escort carriers made convoy runs to Russia helping to bring lend-lease supplies and equipment to the Soviets. On these northern convoy runs, CVEs engaged in frequent battles with U-boats and land-based German planes. The carrier's fighters often had to take off or land in poor weather conditions and heavy seas, but they

made sure that the supply line to the Soviets stayed open.

Since the British could not build enough escort carriers, and new CVEs under construction in shipyards in the United States (destined for loan to the Royal Navy) were not ready, the resourceful British converted 19 grain or tanker hulls, in their shipyards, to escort carriers, merchant aircraft carriers (MAC ships). Each of these carried four *Swordfish*. They, too, like the CAMs had limited operational capabilities.

The spring of 1943 brought U.S.-built escort carriers to the Atlantic antisubmarine patrols. As part of Adm. King's 10th Fleet, these vessels escorted convoys or formed hunter-killer (HUK) groups made up of 12 or more Grumman TBF *Avenger* torpedo bombers or as many as six Grumman FM *Wildcat* fighters in combination with six destroyers or destroyer escorts. Radar was an invaluable part of these HUK forces, both in the air and on the sea. By the end of the war, two CVEs, USS *Bogue* and USS *Card*, had used their aircraft so well that each had sunk eight U-boats. Between April 1943 and September 1944, the escort carriers sank 33 enemy submarines and shared credit for the destruction of 12 others in the Atlantic alone. Besides using their planes to sink submarines, the CVEs also guided surface warships to the U-boats. The only U.S. Navy escort carrier sunk by a U-boat was *Block Island*, torpedoed on May 29, 1944.

In addition to checking and then helping destroy the U-boat menace in the Mediterranean and the Atlantic, escort carriers also had an important role in Allied amphibious operations in Europe. Allied CVEs provided air cover for the landings in North Africa (November 8, 1942), Sicily (July 10, 1943) and on the Italian mainland at Salerno (September 3, 1943). At the same time available CVEs provided antisubmarine patrols in the vicinity of the amphibious fleet. Carrier and land-based aircraft protected the Allied fleet and reduced the effectiveness of the German aerial defenses, all of which helped the landings succeed. By

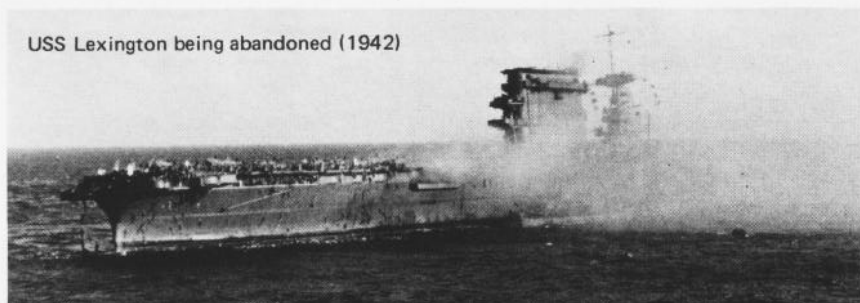
Japanese kamikaze pilots



Saratoga crew fights fires after attack.



USS Lexington being abandoned (1942)



D-Day at Normandy beach in France (June 6, 1944), the Allied sea lanes were nearly clear of enemy submarines due to the patrols of land and carrier-based aircraft. During the month of June 1944, the 58 U-boats ordered to break up the Allied invasion fleet sank only two British frigates, a corvette and an empty transport. German losses, in contrast, were heavy — 13 submarines to Allied air patrols over the English Channel.

The eventual success of surface escorts and land and carrier-based aircraft in the battle with the U-boat greatly facilitated Allied amphibious operations in the Mediterranean and at Normandy. In addition to the close air support of troops ashore, which carriers supplied in all the landings (except at Normandy where British land bases were close enough to the assault beaches), the carriers were instrumental in establishing the initial beachhead in each operation. In every case, amphibious attacks were the prelude to Axis defeat. Allied naval forces had established command of the sea for the Allies through conquest of the U-boats. Thus, once the Allies broke out of the beachhead at Normandy, the brunt of the war in Europe was carried by Allied strategic bombers and the growing land armies, as they pushed and fought toward Berlin.

In contrast to the European war, which involved the use of strategic bombing and large land armies to defeat the Nazis, the war in the Pacific demanded sea power strategy. After the war, the U.S. Strategic Bombing Survey explained that "Japan's geographical situation determined that the Pacific war would in large measure be a war for control of the sea, for control of the air over it. As a result, attacks against warships and merchant ships and amphibious operations for possession of island positions on which forward bases could be located were close to the heart of the struggle. Carrier task forces, surface ships to provide logistic support, and submarines, therefore, assumed roles of unusual importance."

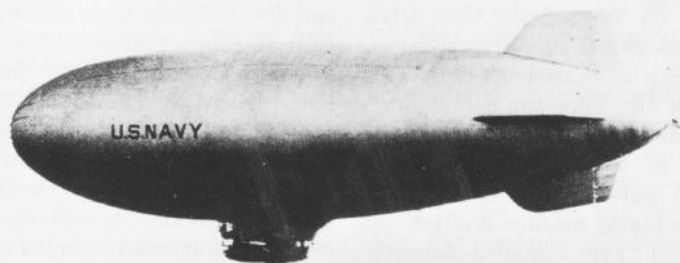
A basic part of Allied control of the sea was the protection of merchant

shipping in the Pacific. Fortunately for the Allies, the Japanese submarines were not as much of a threat to merchant shipping after 1942 because of Japanese submarine employment policy. Despite some successes in the first year of the war, Japanese submarines were generally ordered to confine their offensive operations to attacks on enemy warships, not merchantmen. The Japanese also used many of their submarines for special missions, such as conveying supplies to bypassed island garrisons, further reducing their effectiveness as commerce raiders. Thus the initial advantage which the Japanese gained in the early months of the war soon frittered away as Allied commerce protection became more effective. By 1943, when a substantial number of escort carriers joined naval operations in the Pacific, the Japanese submarine menace was growing small-

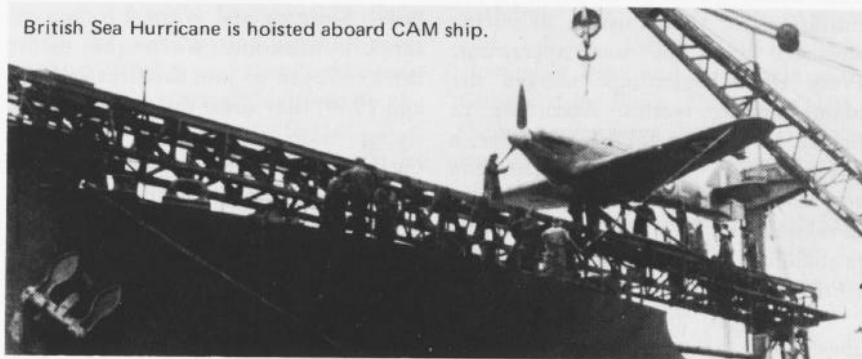
er. And each new escort carrier added more aircraft to the fleet which could patrol, along with Navy flying boats, the wide expanses of the Pacific and protect Allied convoys.

The Navy's fleet submarines in the Pacific were the great commerce destroyers in the war with Japan. These submarines sank 54 percent (4,774,000 tons) of the Japanese merchant fleet. U.S. submarines also sank 540,000 tons of Japanese warships. Yet, what is equally impressive and too-little remembered is that aircraft belonging to the U.S. Pacific Fleet compiled a very creditable record of Japanese merchant and warship tonnage destroyed: 1,543,000 tons of merchant shipping and 745,000 tons of naval vessels. Since the Japanese failed to devise an effective defensive strategy for the protection of their merchantmen, they usually paid

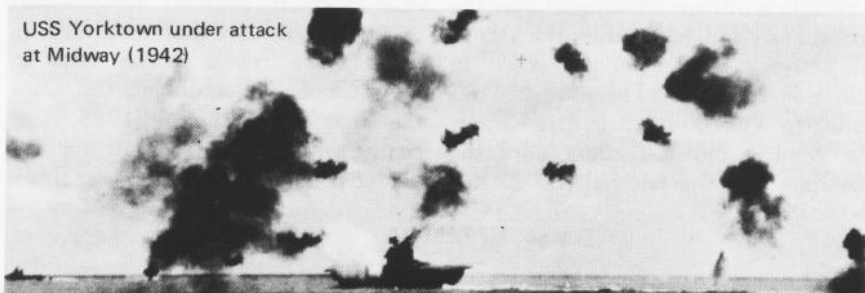
K-type airship



British Sea Hurricane is hoisted aboard CAM ship.



USS Yorktown under attack at Midway (1942)



heavily when attacked by U.S. Navy airplanes or submarines. The overall effect of this gradual destruction of the Japanese merchant fleet by aircraft and submarines was to cut off the industrial centers of Japan from the resources and strategic materials of the lands they had conquered in East Asia.

By the spring of 1945 the air-sea blockade of Japan was very effective, strangling the Japanese economy. But blockade alone could not recapture lost territory, especially the many Pacific island bases or the Philippines which the Japanese had conquered in the first six months of the war. These Japanese strongholds and bases could only be retaken through amphibious operations, or what is generally called "island hopping." Successful invasion from the sea depended upon two conditions: the development of coordinated amphibious doctrine and tactics and local command of the air and sea. The U.S. Marine Corps in conjunction with the Navy amphibious forces provided the former; the Navy's fast carrier task forces supplied the latter.

Although many students of military history in the inter-war period interpreted the Anglo-French disaster at Gallipoli in WW I as proof that a successful seaborne invasion was nearly impossible in modern warfare, the U.S. Marine Corps disagreed. After the establishment of the Fleet Marine Force in 1933, the Marines set about developing an amphibious warfare doctrine which would guide them in the fulfillment of their mission of seizing advanced bases for naval operations. From these beginnings emerged the island-hopping tactics. According to British Major General J.F.C. Fuller, a distinguished military historian, the amphibious tactics which the Allies developed in WW II were "in all probability . . . the most far-reaching tactical innovation of the war."

An integral part of these Allied amphibious assault tactics was the full utilization of close air support over the beachhead and in securing the assault objectives. The techniques used in close air support had been worked out prior to WW II, but their first big test in combat did not come until the landings at Guadalcanal in August

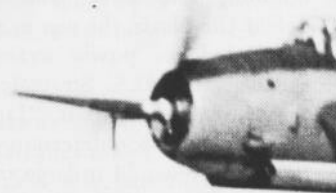
1942. In the prewar debate over amphibious tactics, some Marine Corps and Army planners argued against the use of close air support (within 200 yards) of troops in the field because this tactic would probably not be effective, was too expensive and would probably be too dangerous because of the possibility of hitting friendly troops. Despite these objections, the Marines found (in actual field operations during the inter-war years in Haiti, the Dominican Republic and Nicaragua) that close air support could be used if there was adequate and reliable ground-to-air radio communication for coordinating air strikes. By the time the U.S. was able to take the offensive at Guadalcanal, the Navy and Marines were willing to try close air support. The Army relied, instead, on "attack in depth," hitting enemy troops, supplies and lines of communication well behind the front lines.

In the amphibious operations of the Pacific War the Navy flew its fighters and dive bombers from its carriers for close air support missions. The Marines generally flew their aircraft from land bases, such as Henderson Field at Guadalcanal. Until the fall of 1944, Marine Aviators rarely flew close air support missions from carriers, but that arrangement was changed when the Navy desperately needed qualified pilots for both its fast carriers and escort carriers. At first Navy pilots flew F4F *Wildcats* and SBD *Dauntlesses* from fast carriers such as *Enterprise*, *Saratoga* and *Wasp* for close air support missions. When the escort carriers began to join the fleet in 1943 and 1944, they drew the assignment of flying close air support. Once the CVEs took up close air support, the fast carriers had more opportunity to take the offensive against enemy surface or air forces which were not necessarily in the immediate vicinity of the assault target. In October 1944 Marine Aviators began training to fly close support missions from escort carriers. Eventually they embarked on four (*Block Island*, *Gilbert Islands*, *Cape Gloucester* and *Vella Gulf*), for the landing operations in 1945, especially the expected assault on the Japanese home islands. Whether flown

by Navy or Marine Corps pilots, close air support of amphibious operations during WW II involved both defense against enemy aircraft or submarines in the vicinity of the assault beach and support of the troops ashore, with bombs, rockets or other weapons.

With the invasion of Tarawa in the Gilbert Islands on November 20, 1943, the Navy-Marine Corps amphibious team began to refine and develop close air support tactics. During this operation, eight escort carriers provided combat air patrols for the landing forces and bombing and strafing missions for troops ashore. They also flew antisubmarine patrols in the invasion area. These CVEs subsequently proved that they were as invaluable in the Pacific as they had been in the Atlantic. As mobile air bases, they could carry out antisubmarine searches, escort merchant convoys or service force ships, and ferry aircraft from bases in the rear to forward combat areas. Although the escort carriers were smaller and slower than the fast carriers of WW II and carried only 30 fighters and torpedo planes, they were very useful ships. Consequently by

TBF Avenger launches torpedo.



July 1942 the Navy had 99 CVEs in various stages of construction or conversion or on order (34 of these eventually went to the Royal Navy). Escort carriers were built either from the keel up or by conversion of merchant ships. The first conversion was accomplished in three months in 1941. Altogether 51 C-3-type merchant hulls were converted. This building program was so effective that in 1944-1945 4 to 7 CVEs normally operated in formations with 6 to 12 destroyers or destroyer escorts. In the landing at Leyte Gulf in October 1944, 18 escort carriers provided air support for the assault, with some 500 aircraft assisting in Gen. MacArthur's return to the Philippines.

Island hopping involved more than the ready availability of close air support and the courage and determination of the troops on the beaches. According to the U.S. Navy's *Fleet Tactical Publication No. 167* of 1941, two prerequisites for successful amphibious operations were secure lines of communication and command of the sea and air. The Allied Navies fighting in the Pacific were able to

secure these two prerequisites and, consequently, to ensure the eventual success of island hopping as a strategy because they perfected the fast carrier task force as the weapon for defeating the Japanese Navy.

When the Japanese attacked Pearl Harbor, they held all the offensive advantages. After an abortive attempt to prevent the Japanese occupation of Wake Island in late December 1941, the first U.S. Navy offensive actions were some hit-and-run carrier raids on the Marshall Islands (January 1942) and the Doolittle Raid on Tokyo in April 1942. In this raid *Hornet* ferried 16 Army B-25 bombers, under the command of Lieutenant Colonel James Doolittle, to a point some 650 miles from Tokyo where the bombers took off. None of the bombers were lost over Japan because the raid was a complete surprise, but not all the planes were able to find safety in China, an American ally. Of the 80 men aboard the bombers, 65 eventually got back to the United States, 9 were lost and 6 were captured and imprisoned for the rest of the war.

By mid-1942 both sides had suffered carrier losses. The Japanese lost their first carrier in the Battle of Coral Sea (May 7, 1942). At Coral Sea, the U.S. Navy lost *Lexington* but prevented the Japanese from invading Port Moresby on New Guinea, a key position in the Allied defense of Australia. This battle was important, not only because it protected Australia but because it was the first naval battle in which the participating warships never saw nor fired upon their opponents. The battle was fought entirely by the airplanes of the opposing fleets.

In the second great fleet battle, at Midway Island (June 4, 1942), both sides suffered additional carrier losses. Again the aircraft of the two opposing fleets provided the firepower. When, in the early stages of the battle, U.S. carrier-based Douglas TBD *Devastators* suffered very heavy losses (only 4 of 41 survived) to faster Japanese *Zeros* and concentrated anti-aircraft fire, the Japanese thought they would be victorious. But just at the moment when triumph seemed to be within the grasp of the Japanese, American SBD *Daunt-*

*less* dive bombers and *Wildcat* fighters caught the Japanese planes refueling and rearming on the decks of their carriers. The Japanese feverishly tried to get their aircraft off the decks and into the air, but U.S. pilots seized the advantage they had gained by surprise and pressed home the attack. When the battle was over, the Japanese had lost 4 fleet carriers, 322 planes and 100 first-line pilots. The U.S. subsequently lost the carrier *Yorktown* because of battle damage and a Japanese torpedo hit during post-battle efforts to save the carrier. The Battle of Midway proved that the carrier had become *the* major warship in the Pacific.

After Midway, the U.S. took the offensive in the Solomon Islands with assaults on Tulagi and Guadalcanal in August 1942. In this naval campaign each side committed four carriers to battle. The Japanese lost one light carrier and suffered damage to two other carriers. The U.S. Navy lost *Wasp* (September 15) and *Hornet* (October 26) to torpedo attacks. *Saratoga* and *Enterprise* both took heavy battle damage which forced them to the yards for repairs. When the Solomons campaign was over, the Japanese fleet had administered heavy losses to the Allies, but the U.S. had won the strategic advantage because the enemy was not able to reinforce Guadalcanal and thus had to abandon it in February 1943.

Following the Solomons, both sides withdrew their carrier fleets to repair and rebuild them. Thus between November 1942 and the assault on the Gilbert Islands in November 1943, there were no large fleet battles and no further carrier losses. During this year of rebuilding, U.S. Navy carriers did make some hit-and-run raids on Japanese positions, but the Marine and Army troops, under Gen. MacArthur, and the Navy's submarines, under Vice Admiral Charles A. Lockwood, did most of the fighting. By the time the U.S. Navy began its program of island hopping across the central Pacific in the fall of 1943, it had so many carriers and airplanes the Japanese were not able to regain the strategic offensive.

*To be continued*

