COAST GUARD AVIATION

by Robert Schenia

The Coast Guard was introduced to aviation in 1903 when the surfmen from the Kill Devil Hill Lifeboat Station in North Carolina provided the Wright Brothers with added muscle during the prelaunch activities of that epic flight. Three surfmen helped carry the fragile biplane from its shelter to the launch site on 17 December. Surfman J.T. Daniels took the only photograph of the event using the Wright's camera.

The first practical steps toward a Coast Guard air arm occurred in early 1915 when Lieutenants Elmer Stone and Norman Hall conceived of using aircraft for Coast Guard missions. With the backing of their commanding officer, Captain Benjamin Chiswell, they approached the Curtiss Flying School at Newport News, Virginia, discussed their idea and were taken on experimental flights in the school's aircraft. A Curtiss F flying boat was used for much of the experiment. The aircraft lacked navigational equipment


Curtiss F

and, therefore, never ventured beyond the sight of land. In spite of the technological limitations of the aircraft, the experiment proved successful and as a result, Stone and five others were assigned to the Naval Aviation School at Pensacola for training in April 1916. Hall was sent to the Curtiss factory to study aeronautical engineering. Later in 1916, Congress authorized the Coast Guard to establish ten air stations, but no money was appropriated and this effort was stillborn.

During World War I, Coast Guard aviators were assigned to naval air stations in this country and abroad. One Coast Guardsman commanded the Naval Air Station, Ile Tudy, France, and won the French Chevalier of the Legion of Honor. Another commanded the Chatham Naval Air Station. He also piloted one of two HS-1 seaplanes that bombed and machine-gunned a German U-boat off the coast of New England. The bombs failed to explode and the submarine escaped.

Curtiss NC-4

A by-product of the war effort was the stimulus and potential to fly the Atlantic. In May 1919, four Navy Curtiss seaplanes, each crewed by five aviators, began the great experiment. One plane, NC-4, ultimately succeeded. It was captained by LCDR A. C. Read, USN and was piloted by LT Elmer Stone, USCG. In 1983 Elmer Stone was the first Coast Guard pilot enshrined in the Naval Aviation Museum in Pensacola, Fla.

A second false start for Coast Guard aviation occurred in 1920. In March the Coast Guard's first air station was established at Morehead City, NC, when the service took over the abandoned naval air station and borrowed a few Curtiss HS-2L flying boats, and possibly one or two Aeromarine Model 40s, from the Navy. The aircraft were particularly useful at locating those in distress and finding derelict ships. However, funds were not provided to support the operation and the station was closed on 1 July 1921.

Despite the early promise of aviation, the Coast Guard did not receive any money from Congress during or immediately following the war. In 1925, LCDR C.G. von Paulsen

borrowed a Vought UO-1 seaplane from the Navy. Operating from Squantum, Massachusetts, and later Ten Pound Island in Gloucester Harbor, he demonstrated the potential of aviation in combating the smuggling of whiskey. Prohibition had become the law of the land in 1920 and soon its enforcement became the dominant mission of the Coast Guard. As a result, Congress appropriated $152,000 for five aircraft, the first aircraft to be owned by the service. Three Loening OL-5 amphibians and two Chance Vought U-04s were purchased. These aircraft were flown from air stations at Gloucester, Massachusetts, and Cape May, New Jersey, until they were replaced in 1981. Thus, Coast Guard aviation owed its first aircraft to the mission of law enforcement.

Loening OL-5

The first airplane constructed for the U.S. Coast Guard Air Service
Loening Amphibian Model OL-5 No1, delivered Oct. 1926
To Secretary Mellon with kind regards
Mr. Grover Loening

By the late 1920s the search and rescue clientele had changed primarily from coastal sailors to oceangoing motor ships. Ships moved their trade routes farther out to sea away from the dangers of the shoreline as the use of steam and diesel engines for propulsion and steel for construction increased. Now when emergencies arose, they were frequently far off the coast. In 1928 an aviation section was established at Coast Guard Headquarters under the command of Commander Norman Hall. It drew up specifications for a multi-mission aircraft which, given the technology of the day, could be met only by a large seaplane or amphibian. To aid distressed mariners, the Coast Guard developed the concept of the "flying lifeboats." These aircraft could fly hundreds of miles, land in an open and frequently uninviting sea, and carry out a rescue. Seven aircraft were acquired, two Douglas Dolphin RD-2s, which were modified to Coast Guard requirements, and five General Aviation Flying Life Boat PJ-15s which were specifically designed for the service. All were named for important stars. These aircraft were involved in numerous rescues. In one such incident LCDR Carl von Paulsen set the *Arcturus* down in a heavy sea in January 1933 off Cape Canaveral and rescued a boy adrift in a skiff. The aircraft sustained so much damage during the open water landing that it could not take off. This was the fate on a number of ocean rescues that had to be tried when no other rescue craft could be directed to the scene by the aircraft. Ultimately, *Arcturus* washed onto the beach and all, including the boy, were saved.

Grumman J2F Duck

Curtiss SOC-4

In 1934 Henry Morgenthau became the Secretary of the Treasury. He was an aviation enthusiast and supported its expansion within the Coast Guard. He transferred the aviation detachment of the Customs Service to the Coast Guard in 1934. In fact, the materiel benefits of this transfer were small because they introduced into the Coast Guard a conglomeration of aircraft that were mostly in poor condition and impossible to maintain. Notwithstanding, the Secretary's enthusiasm for Coast Guard aviation was important to its development. He obtained Public Works Administration (PWA) funds for the purchase of new aircraft and additional air stations. By 1936 the Coast Guard had six air stations, two air detachments and 42 aircraft.

Also during the 1930s, the marriage between the cutter and aircraft took place. The 327-foot cutters each embarked a Grumman J2F amphibian. These aircraft-equipped cutters were designed to patrol against opium smuggling off the West Coast and fisheries violations in Alaskan waters, and to serve on guard duty in the Atlantic to protect the embryonic transcontinental commercial air service.

World War II accelerated the growth of aviation within all of the armed services including the Coast Guard. Coast Guard aviation played a critical role in the defense of Greenland. Prior to the United States' entry into World War II, the cutter *Duane*, with a Curtiss SOC-4 on board, surveyed the coast of Greenland during the summer of 1941 for potential airfield sites. After fighting began, aircraft flying from cutters searched for and helped locate German weather stations in the frozen northern areas of Greenland. These stations were providing critical data to U-boats operating in the North Atlantic. The stations were captured by the Coast Guard. Also, Coast Guard aircraft performed harrowing rescues by flying through snow storms

and landing on the ice cap to aid distressed Allied air crews who had crashed while attempting to ferry aircraft across the Atlantic. During one such rescue in December 1942, LT John Pritchard and Radioman Benjamin Bottoms lost their lives after having rescued part of a B-17 aircrew the previous day. In late 1943, Patrol Bombing Squadron Six was activated in Greenland.

Back along the American coasts, Coast Guard aircraft patrolled for U-boats. In August 1942 a Grumman J4F *Widgeon* flown by Chief Aviation Pilot Henry White sank U-166 in the Gulf of Mexico. This aircraft is on display at the Naval Aviation Museum in Pensacola, Florida. Coast Guard aircraft also searched for merchant mariners who were the victims of enemy torpedo attacks. During the war, Coast Guard aircraft found one thousand survivors and directed rescue units to the scene. Coast Guard aircrews rescued one hundred survivors by landing in the open sea. On occasion, the aircraft had to taxi ashore because the weight of those rescued prevented the aircraft from taking off.

By 1941 the Coast Guard was very interested in developing the helicopter for search and rescue. LCDR William Kossler had represented the Coast Guard on an interagency board formed in 1938 for the evaluation of experimental aircraft, including the helicopter. However, World War II interrupted these plans. The Coast Guard, incorporated into the Navy on 1 November 1941, was tasked in early 1943 with developing the helicopter for antisubmarine warfare. Sikorsky HNS-1 and HOS-1 helicopters were ordered and pilot training began at Brooklyn Air Station. Coast Guard personnel trained British pilots who undertook a joint British-American helicopter trial on board the merchant ship *Daghestan*. In fact, during the war all Allied helicopter pilots were trained by the Coast Guard at Brooklyn Air Station. The *Daghestan*, fitted with a landing deck and carrying two HNS-1 helicopters, crossed the Atlantic in convoy in November 1943.


PBY Catalina

Additional helicopter evaluation tests were carried out on the cutter *Cobb*. This old coastal passenger ship had been converted into the world's first helicopter carrier. On 29 June 1944 CDR Frank Erickson made the first landing on its deck in Long Island Sound. As the war progressed and the U-boat threat moved deeper into the North Atlantic and then abated, the service reoriented its helicopter research from antisubmarine warfare to search and rescue. CDR Erickson pioneered this Coast Guard activity, developing much of the rescue equipment himself and carrying out the first lifesaving flight. He delivered two cases of blood plasma lashed to an HNS-1s floats following an explosion on board the destroyer *Turner* off Sandy Hook on 3 January 1944.

One of the early helicopter's most successful rescues occurred in 1945. A Royal Canadian Air Force plane crashed in a remote area of Labrador. Two ski-equipped aircraft tried to rescue the nine survivors, however, one crashed on landing and the other was trapped on the ground by the snow after having successfully flown out two survivors. The only way to rescue the remaining men was by helicopter. A Coast Guard HNS-1 was disassembled at Brooklyn Air Station, loaded into a C-54 transport, and airlifted to Goose Bay, Labrador. There, LT August Kleisch flew it 150 miles to a staging station and then on 35 miles more to the crash site. Obstacles such as a frozen engine and skis that would freeze solid to the ground were overcome and all were rescued. In 1943 an Air Sea Rescue Squadron was formed at San Diego, Calif. The primary impetus for this was the increasing number of offshore crashes, mostly by student pilots. These were the result of the rapid expansion of military aviation during the war. Initially, the PBY-5A and high-speed watercraft were chosen as the rescue vehicles and additional squadrons were formed. In December 1944 the Office of Air Sea Rescue was established at Coast Guard Headquarters. By 1945 Air Sea Rescue was responsible for 165 aircraft and nine air stations. During that year, it had responded to 686 plane crashes. The PBY-5As were replaced by Martin PBM-5Gs after the war.

The post-World War II years brought an explosion in the number of recreational boats and created a new search and rescue clientele. The helicopter was ideally suited to this mission. Able to react swiftly, it could lift entire pleasure boat crews from imminent disaster, or in less trying circumstances, deliver dewatering pumps and fuel. Admittedly, during its early years the helicopter had a major handicap—the pilot needed three hands in order to fly it. Soon, however, helicopters rescuing distressed boaters became a commonplace event.

The versatility of the helicopter was demonstrated during a series of floods, which occurred in the United States during the 1950s. To carry out this kind of rescue work, the helicopter had to hover among trees, telephone poles, television antennas and the like. In 1955 Coast Guard helicopters rescued more than 300 people as rivers overflowed in Connecticut and Massachusetts. In December of that year the Coast Guard on-scene commander directed the rescue

of thousands of flood victims in California. Included among the 21 rescue aircraft were Coast Guard helicopters. In one incident an HU45 rescued 138 people during a 12-hour period. This was accomplished by two aircrews. The helicopter soon grew from a pampered thoroughbred to a reliable workhorse.

The responsibilities of Coast Guard fixed wing aviation also increased following World War II. In 1946, Coast Guard aircraft were used for the first time on the International Ice Patrol, a practice that continues today. The primary objective of these Ice Patrol flights is to observe ice floating in the vicinity of the Grand Banks, so that shipping in that well-traveled area can be advised of current conditions throughout the iceberg season. Ice Patrol flight tracks are normally between 1,000 and 1,500 nautical miles long (from six to eight hours' flight time). Since 1983, the flights have used HC-130 aircraft carrying Side-Looking Airborne Radar (SLAR) equipment as the primary reconnaissance tool. At the normal altitude of 8,000 feet, the SLAR can cover a swath extending 35 miles on each side of the aircraft.

HC-130 on iceburg patrol in the North Atlantic.

After the end of World War II, Coast Guard aircraft were also used increasingly to intercept and escort aircraft that were experiencing mechanical problems. The presence of the Coast Guard aircraft was reassuring to both passengers and flight crews. During the 1950s, the Coast Guard developed open-ocean ditching techniques that are still in use by commercial airliners today through the experiments conducted by CAPT Donald MacDiarmid. In 1986 he was enshrined in the Naval Aviation Museum, in Pensacola, Florida. In 1959 the Coast Guard obtained its first Lockheed HC-130 Hercules. Large, rugged, and extremely reliable, this aircraft could cruise on two of its four engines thereby greatly extending its range. During the Korean War, the Coast Guard established air detachments throughout the Pacific. These detachments, located at Sangley Point in the Philippines, Guam, Wake, Midway, Adak, and Barbers Point in the Hawaiian Islands conducted search and rescue to safeguard the tens of thousands of United Nations troops that were being airlifted across the Pacific. In January 1953 a PBM flying from Sangley landed in 12-foot seas in an attempt to rescue a Navy P2V crew. The Coast Guard amphibian crashed on take off when an engine failed. Five Coast Guard and four Navy men lost their lives.

Aviators were among the 7,000 Coast Guard personnel who served in Vietnam. In April 1968 three Coast Guard helicopter pilots were assigned to the 37th Aerospace Rescue and Recovery Squadron at Da Nang, Vietnam. Pilots were assigned there until November 1972 while their Air Force counterparts were assigned to stateside Coast Guard air stations. One Coast Guard pilot, LT Jack Rittichier, died in a rescue attempt. He was attempting to pick up a downed Marine Corps flier when his helicopter took heavy ground fire, touched down, and burst into flames.

The helicopter continues to be a primary rescue tool now and into the foreseeable future. In 1980 over 100,000 refugees fled communist Cuba. Many risked their lives in unsafe craft to cross the Straits of Florida. The rescue of those on board the *Olo Yumi* is illustrative of the situation confronting the Coast Guard. On the morning of 17 May the pleasure craft *Olo Yumi*, carrying 52 persons, sank when the people on board panicked because of rough seas, ran to the stern, and caused water to come over the transom. A Sikorsky HH-52 Seaguard on patrol from the cutter *Courageous* sighted the people in the water and began rescue operations. Eleven survivors were hoisted to the helicopter. Other Coast Guard helicopters and Courageous rescued 38 survivors and recovered 10 bodies. The boat had been grossly overloaded. The HH-52, now being replaced by the Aerospatiale HH-65 Dolphin, has rescued more persons from distress than any other helicopter in the world.

HH-65 "Dolphin" short range recovery helicopter.

In October 1980, the Sikorsky HH-3F Pelican, the service's medium range helicopter, was the primary rescue vehicle when hundreds of individuals, mostly senior-citizens, were plucked from bobbing lifeboats some 200 miles out in the Gulf of Alaska. This followed a fire on board the cruise ship *Prinsendam* and was one of the most successful maritime rescues in history.

With the increasing responsibilities in defense readiness, law enforcement, fisheries patrol, and environmental protection, the Coast Guard has acquired a new generation of aircraft. Today, the primary aircraft in the Coast Guard inventory are the HU-25A Guardian, the HC-130 Hercules, the HH-65A Dolphin, the HH-52 Seaguard, and the HH-3F Pelican. During the mid-1980s, 41 HU-25A medium range surveillance fanjets replaced the Grumman HU-16E Alba-

HU-25A "Guardian" medium range surveillance aircraft.

tross and the Convair C-131A Samaritan, both prop driven aircraft. The Guardian is the service's first multi-mission jet. It is nearly twice as fast as any aircraft in the inventory and can get to the scene quickly to perform its role. Sixteen new HC-130H Hercules turboprop aircraft have joined the Coast Guard fleet and replaced earlier models. The primary missions of the Hercules are long-range surveillance and transport. The Coast Guard is currently adding 96 short-range HH-65A helicopters to its fleet to replace the aging HH-52A Sikorsky Seaguard. Primarily a search and rescue vehicle, the twin engine Dolphins operate up to 150 miles off shore and will fly comfortably at 150 knots for three hours. The HH-3F Pelican is the service's medium range helicopter.

To assist those in distress and to patrol national waters, the Coast Guard flies some 200 aircraft from 27 air stations, large and small, throughout the continental United States, Hawaii, Alaska and Puerto Rico. The Coast Guard is the seventh largest naval air force in the world. Coast Guard aviation, rotary and fixed wing, moves into the future proud of its past and confident of its future.

(Photos: US Coast Guard)