

ROTARY WINGS AND OTHER *Things!*

By

CDR Stewart Ross Graham, USCG (Ret)

INTRODUCTION

I have always been fascinated by the wonders of flight - - the flying machines as well as the daring aviators who flew them. The flying machine I came to know best was the helicopter.

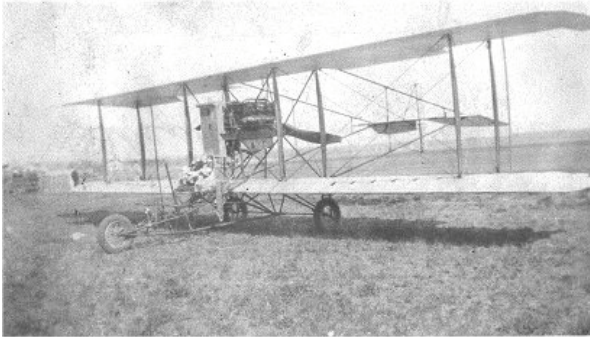
Throughout the many stages of my life and career in the Coast Guard, I have met wonderful, adventurous, imaginative, talented, visionary people. I have met presidents, generals, and admirals. I have flown experimental aircraft. During World War II, I helped develop the technique of "sonar dipping" to detect enemy submarines.

THIS IS MY STORY

Stage One

I was born in 1917 and grew up in Rosedale, then a small country town on Long Island, New York, about a mile from the Curtiss-Wright Airport. At the age of eight in 1925, I was allowed to ride my bicycle to this airport, where I spent most of my spare time. Because I was a constant presence around the aircraft, the pilots began to recognize me and eventually allowed me to help them push their machines in and out of the hangar. At the end of the day, I helped them wipe off the oil that had accumulated around the engines during flight. What a thrill it was at that early age to be so close to those flying machines!

Most of those aviators were unknown but many later became famous round-the-world flyers, barnstormers, stunt pilots, cross-country speed contestants. I think those pilots enjoyed having me around and lending a hand. They recognized my interest, enthusiasm, and desire to learn about flying from them.



Curtiss Pusher with Stew June 1931



Curtiss Robin with Stew June 1931

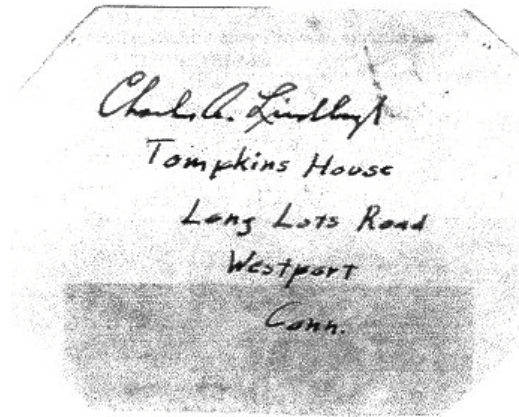


Travel-Aire with Stew June 1931



Curtiss Jenny with Stew 1929

Charles Lindbergh was a frequent visitor, especially when he was courting his wife-to-be, Anne Morrow. (He began his famous career as an air mail pilot.) Thus seventeen years later, I had the honor and privilege of having dinner with Lindbergh at a hotel in New York City when we were both helicopter students. During the course of dinner, Colonel Lindbergh invited my wife, Mae, and me to his home in Westport, Connecticut.



In 1927 at the Curtiss Wright Airport, I assisted Maitland Bleacher, a designer and pilot, roll his one-of-a-kind rotor-type machine out from the hangar for a run-up. Seventy-one years later, on October 17, 1998, I met him again during the second anniversary of the American Helicopter Museum and Education Center in West Chester, Pennsylvania. We were both panel members during the ceremony. He remembered me, an eager little fellow willing to help him with his machine.

When I wasn't hanging around the airport, I made model airplanes, mostly World War I types, some of which won prizes in competitions. I also had a newspaper route and would spend \$5.00 of my earnings for a five-minute flight in a Cessna or Curtiss Robin. For several years, I was a member of the Junior Birdmen of America.

At the age of fourteen, I won first place for an essay I wrote on aviation. The prize was flight instructions with Roger Q. Williams, the then-famous pioneer flyer who flew across the Atlantic in a Bellanca monoplane after Lindbergh made his crossing. I passed the necessary mental and physical examinations and was ready for my flight instructions. However, because the normal age for a student to begin flight instruction was sixteen, the prize council had to obtain permission from the Federal Aviation Authority. I was turned down, so I accepted the alternate prize, which was a good sum of money.

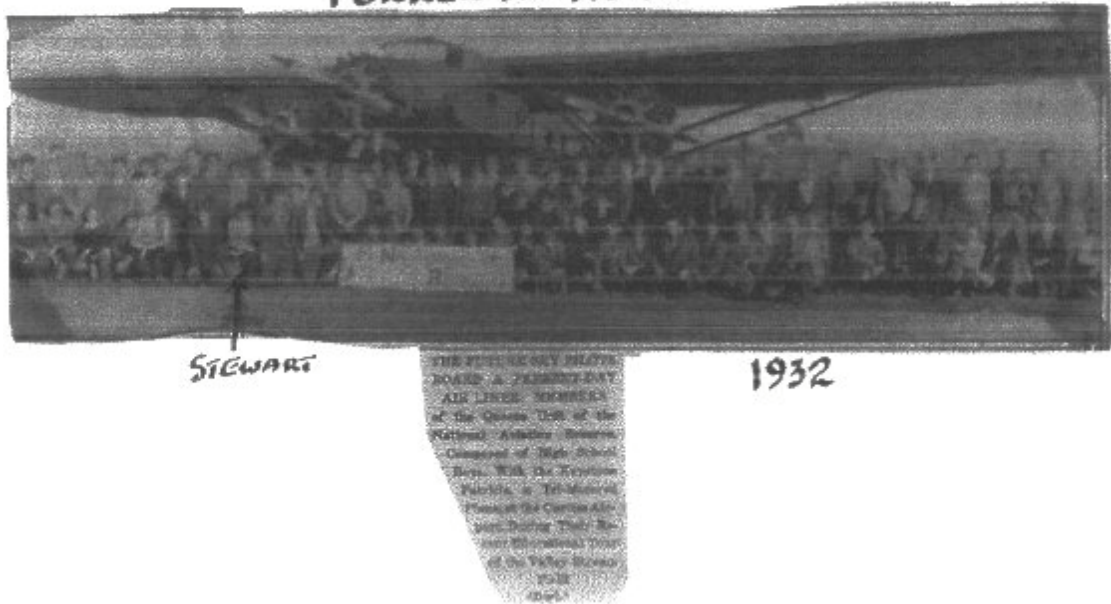


Paul Misko, Maitland Bleacher's Nephew

1931 AT THE VALLEY STREAM CURTISS WRIGHT AIRPORT, L.I., N.Y.
TICKET STUBS FROM MY FIRST FLIGHT

<p>KEEP THIS SOUVENIR STUB</p> <p>IT IS WORTH \$1.00 CREDIT ON THE PURCHASE OF A REGULAR \$3.00, \$5.00 OR \$7.00 INTERNATIONAL FLIGHT AT ANY BRANCH OF THE</p> <p>CURTISS WRIGHT FLYING SERVICE "WORLD'S OLDEST FLYING ORGANIZATION"</p> <p>ONLY ONE CREDIT STUB WILL BE ACCEPTED TOWARD PERCENTAGE OF EACH TICKET</p> <p>No. 143496</p> <p>FORM 285-A (1928)</p>	<p>FOR DETAILED INFORMATION ON:</p> <ul style="list-style-type: none"> FLYING SCHOOLS GROUND COURSES AIR TAXI SERVICE AERIAL PHOTOGRAPHY AIRLINE TRANSPORTATION AERIAL ADVERTISING CROP DUSTING AVIATION SUPPLIES <p>CHECK SQUARE, FILL IN NAME AND ADDRESS BELOW AND MAIL TO GENERAL TRAFFIC OFFICE.</p> <p>CURTISS-WRIGHT FLYING SERVICE 27 WEST 57TH STREET - NEW YORK</p> <p>OR THE ADDRESS STAMPED ON THE BACK OF THIS STUB</p> <p>NAME <u>Stewart Graham</u></p> <p>Address <u>135 212th Street</u></p> <p>CITY <u>Rosedale Long Island</u></p> <p><u>N.Y.</u> AGE <u>14</u></p> <p>143496</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Curtiss-Wright Flying Service</p>
--	--

I become a member of the Junior Birdmen of America
Fokker-Keystone Tri-Motor Aircraft
FOKKER TRI-MOTOR

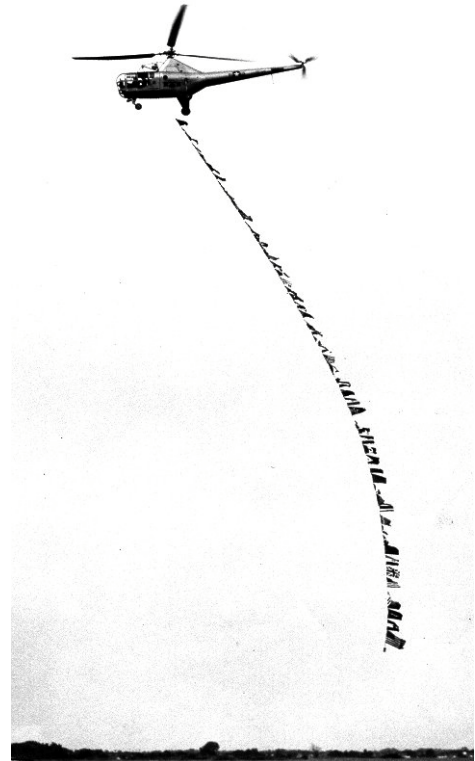


Curtiss-Wright Airport

Curtiss-Wright Airport originated in the early 1920s in what had been a potato field that had been plowed under and planted with grass. One hangar was erected. This little grass field developed into one of the largest airports in the country.

On July 31, 1948, the airport was re-named Idlewild Airport. The daily dedication ceremonies lasted until August 8. I participated in these ceremonies by demonstrating both the maneuverability of our latest Coast Guard HO3S-type helicopter as well as its search-and-rescue capability. At the end of each day's events, using a hydraulic hoist, I pulled up all of the international code flags from a barrel that was positioned at the far end of the field, circled the airport and the grandstand area, and returned to the starting point. I then lowered the flags back into the barrel before landing.

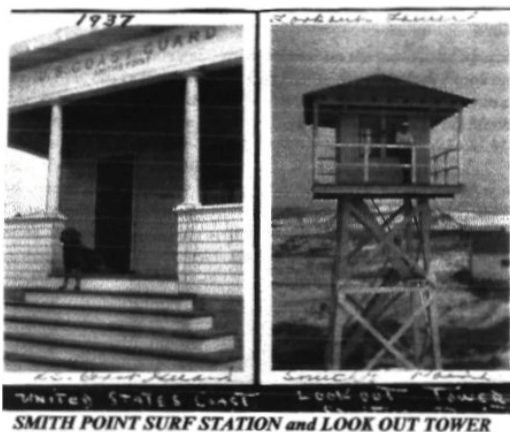
Idlewild Airport was later to be re-named the John F. Kennedy International Jetport.



Stage Two

After the Great Depression, I was nineteen and steady employment was hard to come by. It seemed that my only choice was the military. I was familiar with the Army, Navy, and Marines, but not the Coast Guard. So the United States Coast Guard became the challenge. In February 1937, I submitted an application for enlistment. After waiting anxiously for several weeks, I received a telegram instructing me to report for enlistment at the Bay Shore, New York, Coast Guard District Office on the morning of March 19.

There, I was given a brief dissertation on the duties of a Surfman and told to memorize the contents of the so-called Blue Book Manual. I also received my enlistment serial number (211-192) and the title of Surfman Number 9. I was informed that my enlistment was temporary, provisional, and on a "green ticket" assignment. The monthly pay was \$60.00. I was also told that the government could cancel my enlistment at any time, at their convenience, if I could not live up to the contract I had signed.



My first duty station was at Smith Point, Long Island, New York.

Because the station was isolated from the mainland (on Fire Island), I used signal flags to attract the attention of the man (guard) in the watchtower, who then arranged for a Coast Guard motor launch to pick me up. I was welcomed with a full sea bag of everyday work clothes.

The duty at the surf station was to stand four hour tower watches. When the visibility was reduced to a half-mile, we patrolled the beach on foot, a seven mile round trip, to warn ships, particularly sailing vessels, when they were in danger of running aground.

Within a year, the Smith Point Surf Station was closed down, and I was transferred to the Georgia Coast Guard Station in East Hampton, New York. My duties remained the same. However, because this station was on the mainland, we were given twelve-hour liberties twice a week. During these periods, I took advantage of correspondence courses in motor machinery and completed all the assignments with high grades in little over a year. This put me in a position to be in charge of all machinery. Eventually I was promoted to the rating of Motor-Machinist Mate Second Class (Mo.M.N. 2c), thus eliminating the title of Surfman.

A tailor from Brooklyn who made military dress uniforms visited the station on a monthly basis. I was measured precisely for my dress uniform. When the tailor returned a month later with my uniform, it was a perfect fit, requiring no adjustments.

In early 1940, I was again transferred to a larger and more active unit on Long Island, the Long Beach Inlet Station at Far Rockaway. I was second in charge of the overhaul and maintenance of all machinery.

Later in 1940, headquarters issued a bulletin requesting anyone interested in becoming an aviation pilot to submit his name via official channels. I volunteered and was ordered to take a mental and physical examination from an aviation flight surgeon in New York City.

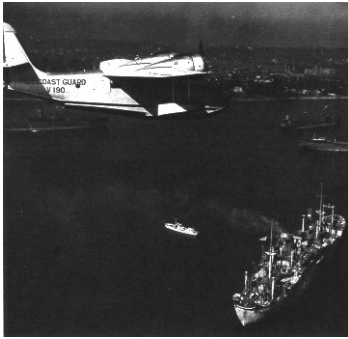
I fulfilled the requirements and was ordered to proceed to the Coast Guard Air Station in Charleston, South Carolina, to participate in their flight elimination training program. I was with nineteen other enlistees; we all knew that ten of us were to be eliminated.

Stage Three

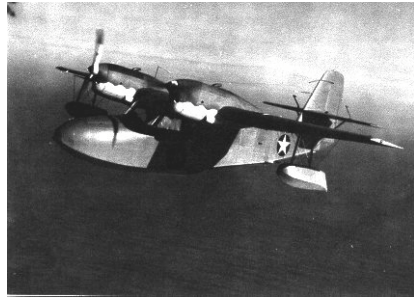
I soloed and was one of the ten chosen to proceed to the Naval Air Station in Pensacola, Florida, for primary flight training. I graduated on September 5, 1941, received my gold wings, and was designated as the fortieth Coast Guard enlisted pilot with the title of Motor Machinist Mate Second Class Aviation Pilot.



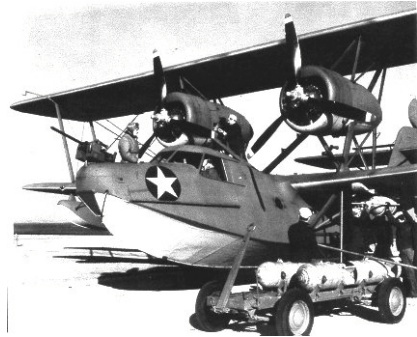
I was then transferred to the Coast Guard Air Station, Floyd Bennett Field, in Brooklyn and assigned as the assistant to the operations officer, flying Grumman amphibians and the Hall aluminum flying boats.



JRF-3 Grumman Goose

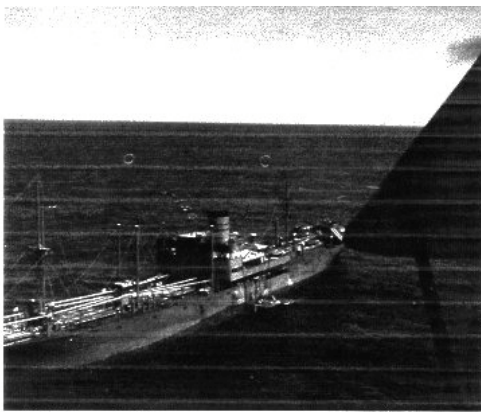


J4F-1 Grumman Widgeon



PH-3 Hall Boat

Wedding bells rang loud and clear when I married Thomasina (Mae) Rana on May 24, 1942 in Amityville, New York. We spent our honeymoon on Cape Cod, Massachusetts.



This is a Norwegian freighter we vectored into position 450 nautical miles South-east of New York City to pick up survivors we located from the torpedoed vessel "ALCOA SHIPPER". On June 1st 1942. Thirty-five men were picked up from the three life-rafts of which three had perished after being adrift for four days before they were located.

During prewar patrols, called security patrols, naval intelligence would advise us of German submarines operating in our assigned patrol area. The Navy would set up a search grid where freighters were known to have been torpedoed. Our mission was to search for possible survivors, then vector in the closest vessel to their position.

One such vessel was a Norwegian freighter we vectored into position 450 nautical miles southeast of New York City to pick up survivors we had located from the torpedoed vessel "Alcoa Shipper." On June 1, 1942, thirty-five men were rescued from three life rafts (circled) after being adrift for four days; three men had perished.

On December 7, 1941, World War II broke out, which meant eight-to-ten-hour antisubmarine patrol flights in the Hall boats and shorter patrols in the amphibians. German submarines were having a field day with the Allied shipping from New York to Europe. We were not prepared to combat the enemy submarines except to plot their positions when we spotted them on the surface and advise naval intelligence of our sightings. Eventually our aircraft were fitted with antisubmarine depth charges. We were then assigned to air-escort convoys as they departed New York Harbor, constantly on the alert to spot a submarine's periscope. These patrols were constant throughout the war.



This was The British Tanker "COIMBRA" torpedoed off the coast of Long Island, New York on January 17th 1943.

On one of my antisubmarine patrols on December 8, 1942, after being airborne for two hours and fifty minutes flying a Grumman Amphibian, the crankshaft broke on the starboard engine. I automatically released the unarmed 325-pound depth charge to lighten the aircraft. These twin-engine machines were not supposed to be able to stay airborne on one engine. However, I was at the end of the patrol, light on fuel, and with full throttle on the port engine. Even then, the aircraft continued to lose airspeed and altitude until it hit a wave crest, which bounced it into the air. This sequence took place several times until I applied a few degrees of flaps to the wing surfaces, which gave me enough lift to stay airborne and maintain an altitude close to 100 feet, landing eventually at Floyd Bennett Field in Brooklyn.

On November 2, 1942, I was given a spot officer's promotion to Ensign and assigned number 114 in the officer ranks.

Stage Four

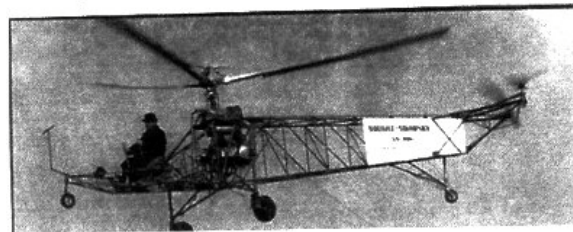
On November 12, 1942, I was assigned to fly our skipper, Commander Watson Burton, the executive officer, Lieutenant Commander Frank Erickson, and the engineering officer, Lieutenant Alvin Fisher to Bridgeport, Connecticut to witness a flight demonstration of Sikorsky's VS-300 helicopter. Captain Kossler, the head of Coast Guard engineering from Washington, D.C., and other VIPs were also present.

Igor Sikorsky and his chief test pilot, Lester Morris, put on an unforgettable exhibition. We were all awestruck at the maneuverability of the machine. Erickson and I immediately requested rotary-wing flight training. Our request was eventually granted, but we had to wait patiently along with three Britishers and six Americans, including Colonel Charles Lindbergh, until enough machines became available for student training.



Mrs. Vita F. Roth, national director Women Flyers of America, shaking hands with Ensign Stewart R. Graham of the Coast Guard. Ensign Graham is the first officer to accept an invitation for the Women Flyers Christmas Tea Dance to be held Dec. 13 at Copacabana Club. Officers of all the armed services will be special guests.

Sikorsky's VS-300 Helicopter.



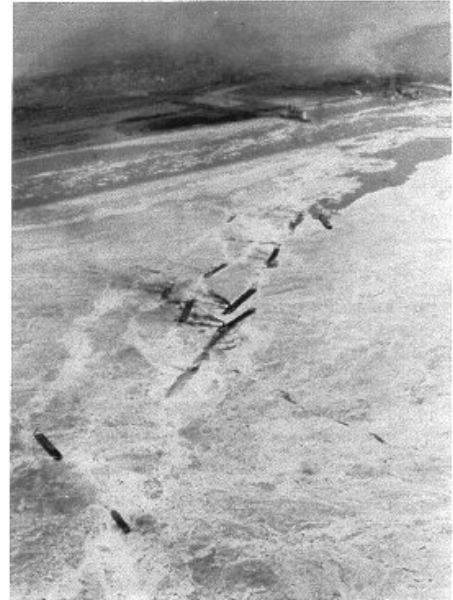
Meanwhile, on March 14, 1943, I was transferred on temporary duty to Traverse City, Michigan, flying a JRF-3 Grumman amphibian.

The mission was to work in conjunction with Coast Guard icebreakers and ore-carrying vessels. The ore boats en route from Buffalo to Detroit or Chicago would become ice-bound. There were times when these vessels would be stuck in the ice for weeks at a time, eventually running out of food and water before an icebreaker could get to them.

My job was to locate ice-bound vessels and vector an icebreaker to the scene. From the air we could see leads or breaks in the ice and advise both the icebreaker and the ore boats in the immediate area as to the openings. Daily ice survey flights were conducted, along with search-and-rescue and administrative missions.

By mid-May, the ice on all the lakes had disintegrated to the extent that the ore carriers were able to navigate on their own. Having accomplished our mission, we closed up shop on May 14, 1943 and returned to Floyd Bennett to resume flying antisubmarine patrols.

On September 1, 1943, I was promoted to Lieutenant, junior grade.



ARRIVING VESSELS ICEBOUND AS THEY DEPART BUFFALO HARBOR



39040

In late 1943 a few YR-4A (HNS-1) helicopters were made available for training purposes.

Mr. Morris checked Commander Erickson as safe to solo, which awarded him the prestigious designation of Helicopter Pilot Number One in the Coast Guard. Erickson became my instructor and, after three and one-half hours of flight time, I recall his

words: "Stew, you're safe to solo," He stepped out of the helicopter and waited a safe distance away behind a tree, near the Sikorsky factory. I pulled into a shaky hover and saw Frank give me a thumbs-up. Smiling nervously, I pushed forward, made a few circles around the meadow and landed safely — earning me the designation of Coast Guard Helicopter Pilot Number Two. This took place on October 20, 1943.



It was an extraordinary way to graduate — no written tests, no diploma or certificate, and no curriculum to follow thereafter. In other words, I was set free to penetrate the unknown with an unleashed, unreliable, underpowered, vibrating, revolutionary flying machine. So I started training to be an instructor, teaching myself, just as Frank [Erickson] had done a few months earlier. The next students were to be trained at Floyd Bennett Coast Guard Air Station in Brooklyn.

The Coast Guard received its first helicopter (Bureau Number 46445) off the assembly line on October 30, 1943. Frank and I flew an acceptance flight on this machine, which proved it to be air-worthy. Now it was up to us to deliver it to Floyd Bennett — the first Coast Guard helicopter ferry flight.

We were hesitant about this adventure; the first aircraft were not too reliable. Frank had lost a tail rotor blade on an approach to a landing and crumpled up a two-day-old British machine. Next, an Army pilot

lost a main rotor blade while in a hover. He recovered, but the first two helicopters were now history. Nevertheless, we were determined so we departed for Brooklyn but stayed close to the shoreline of Long Island Sound.

As we started to cross the Sound, without life jackets or parachutes, we had a meaningful decision to make: "Should we fly high and take a chance of auto-rotating to the shore if the engine conked out?" or "Should we fly low in case the machine started to disintegrate in flight?" With more confidence in the engine than in the rotating parts connected to the airframe, we decided to fly over the water. We tried to stay close to as many boats as we could along our route, thinking that help would be nearby if we had to ditch. Fortunately, the crossing was uneventful, as was the rest of the flight to Brooklyn. However, landing at the field created quite a sensation among the station's personnel.

Commander Erickson was eager to establish a helicopter-training program at Floyd Bennett to prepare for the time when more helicopters would be available. At the same time, he was trying to promote the rotary-wing craft to the dubious powers that be. This gave me the chance to build up more time and experience in flying the helicopter, which I so enjoyed doing. The new aircraft was far more thrilling than flying fixed-wing aircraft, which offered me no new challenges. I felt that the machine actually belonged to me because I was given free reign to come and go with it as I wished. None of the other fixed-wing pilots wanted to get near the so-called "infuriating palm tree." In fact, Erickson and I were ridiculed without mercy by those pilots. They held little hope for our well-being. Their attitude suited me just fine because it enabled me to accomplish many firsts flying the helicopter.

During the first week of November, I had accumulated five hours of flying time and was due for a progress flight check by Les Morris, Sikorsky's chief test pilot. My check flight was to Mr. Morris's satisfaction and was completed with his compliments, accompanied by words of wisdom from a seasoned aviator.

Stage Five

By the end of December 1943, I had accumulated approximately sixty-five hours flying the helicopter. In addition, while in sheltered waters, I had made several landings and takeoffs from a ferryboat that the Coast Guard had converted to a helicopter-training vessel named Coast Guard Cutter Cobb.

At this time, I was informed that I would be assigned to a double A priority secret operation as one of the helicopter pilots aboard a British merchant vessel Daghestan. This ship had two British YR-4B helicopters aboard. We were to ascertain the feasibility of flying helicopters from merchant ships while in convoy during winter months in the North Atlantic to search for enemy submarines.



Other American personnel assigned to this mission:

Lieutenant Commander James Klopp	U.S. Navy
Lieutenant Commander John Miller	U.S. Navy
Ensign Albert Berta	U.S. Navy
First Class Photographers Baker and Cook	U.S. Navy

British personnel who sailed from New York to England:

Captain Thomas Waugh	Commanding Officer, M/S Daghestan
Commander Richard Garnett	Royal Navy
Commander Reggie Brie	Royal Navy
Lieutenant Commander Ted Peat	Royal Navy
Flight Lieutenant Jeep Cable	Royal Navy
Flight Officer Charles Loder	Royal Navy

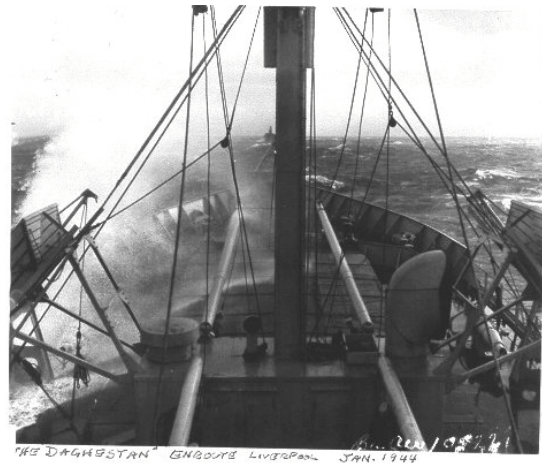
On January 5, 1944, a convoy formed in New York Harbor consisting of twenty-six freighters, two British aircraft carriers, three British escort-type destroyers, one oceangoing tugboat (our rescue vessel), and the Daghestan with the two YR-4Bs. The destination was Liverpool, England. The Daghestan was one of the smallest and slowest ships in the convoy, with a top speed of nine knots. At 5:00 A.M. on January 6, the nine-knot convoy set out on the North Atlantic route for Liverpool.

The weather was bad from the start, and the convoy soon encountered rough seas causing the grain-laden Daghestan to roll and yaw excessively. Strong northeast winds and freezing rain, which developed into heavy snow, prevailed during the first three days.

On the fourth day out, a thirteen-vessel Canadian convoy out of Nova Scotia joined us to accompany us to England. All during the fifth day at sea, the wind and seas built in intensity. At nightfall all vessels were ordered to form a loose formation to avoid colliding. To make matters worse, at 3:00 A.M. on January 11, the general quarters alarm sounded because submarines were in the area. I donned my life jacket and scrambled to my assigned lifeboat with other crew members to be prepared to man the lifeboats. Within minutes, several explosions were heard. Two vessels directly astern of us were torpedoed, another was in flames on the horizon. Our escorts began employing effective antisubmarine warfare (ASW) tactics, but three Allied vessels were lost.

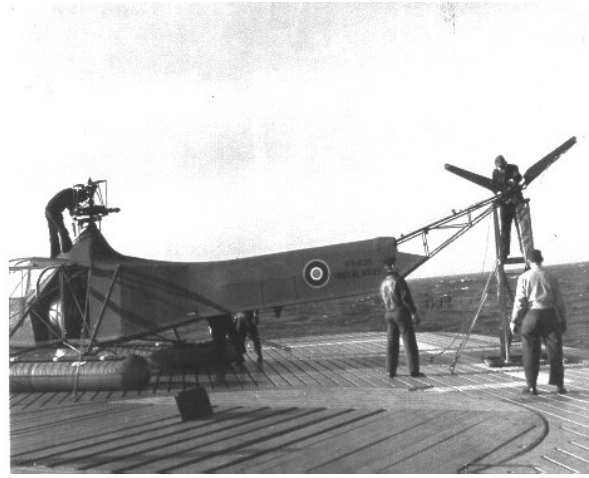
After this torpedo attack, we crew members of the good ship Daghestan began to appreciate our luck in being aboard a slow and inconspicuous vessel among the convoy's larger ships. German submarine captains probably viewed us as not worth wasting torpedoes on.

For the rest of that day and the next, the convoy took evasive course changes. No further submarine activity was reported, but we entered another terrific storm just northeast of the Azores. During the storm, some lumber broke loose from on-deck storage. A two-by-four tore a hole in the aft port fuselage of one of the YR-4s, ricocheted upward to damage the flight-actuating control rod in the rotor head, then fell to embed in the port side float, ripping an air compartment. Three men were washed overboard from the rescue tug and lost, and two large crates containing helicopter spares and two large life rafts were ripped loose from their moorings and lost overboard.



We were taking mountainous seas over the starboard bow, and the wind velocity exceeded 80 knots. With the ship rolling more than 45 degrees at times, the Daghestan and its crew took a beating, and the convoy steadily broke formation. If this wasn't bad enough, one forward hatch was smashed and seawater entered the cargo area, causing the grain on board to shift and give the Daghestan a permanent list of 5 degrees to port. These conditions amplified the problems of protecting the helicopters from salt spray and seawater that washed over the deck almost continuously during the voyage.

Weather and sea conditions prevented flight operations until the tenth day at sea. The weather had abated somewhat but conditions were still harsh. Before attempting flight, however, we faced the challenge of installing the main rotor blades. The ship's 15-degree roll and wet deck made footing treacherous and prevented us from wheeling the YR-4 out on its dolly. It took sixteen men to manhandle the helicopter safely into position. Then we had to pre-flight the machine before installing the blades,



I was chosen to make the first flight but, by the time everything was checked out and ready to go, darkness was quickly approaching. Despite this, I started the YR-4's engine, engaged the rotors, assured that the magnetos checked out OK, waved to the crew, and proceeded to get airborne at 1600 hours in latitude 45.34 degrees north and 27.18 degrees west.



After a half-hour flight around the convoy, I returned to the Daghestan, thus, completing the first takeoff and landing of a helicopter while in convoy on a merchant vessel in the North Atlantic. Flights during the following days proved that helicopters could be practical for ASW patrol.

We finally arrived in Liverpool on January 22, 1944. The helicopters were eventually flown to a small airfield in the town of Speck. These two machines were the first operational helicopters in England.



BRITISH ADMIRALTY DELEGATION
CONFIDENTIAL

MEMORANDUM FROM Naval Air Representative.

TO Recorder, Joint Committee on Evaluation of Helicopters.

BNAS-1/788

26th January, 1944.


This is to inform you that the first ocean crossing of a ship operating helicopters was completed with the arrival of the S.S. DAGHESTAN in the U.K. on 22nd January with two Royal Navy YR4 helicopters and the helicopter trial party under Commander R. P. Garnett, R.N.

2. Advance information is that severe weather encountered on passage restricted flying considerably, as was anticipated. The worst conditions under which flying took place were: wind 40 knots, roll 20°, rise and fall of platform 30 feet, severe yawing of ship.

3. One of the helicopters is stated to be unserviceable; the reasons are not yet known here.

4. A full report will be made available as soon as received.

cj:lg


C. John,
Captain, R.N.

We then proceeded to London via rail; our guest aboard the train was General Howard from Halifax, who had come across in our convoy. We arrived in London on Sunday, January 23. U.S. Naval personnel greeted us and escorted us to our hotel at Golden Square. During the following week, our crew obtained the necessary photos and passports for the trip back to the States. I met a Captain Richmond, U.S. Coast Guard, who invited me to join him for supper, which was interrupted by an air raid.

The following day was set aside for sightseeing: Westminster Abbey, House of Parliament, Kings Palace. On Wednesday, January 26, we had dinner with my Uncle Stewart at 84 Wimpole Street. From there we went to Davies Street to witness the first showing of the movies of our crossing, which covered me making the first takeoff and landing aboard the Daghestan. On January 27, I was invited to have supper with my Uncle Wallace and his wife, Clair, at his club and to be their guest at their home in Seven Oaks, which I did. This was the first opportunity to meet my overseas relatives.

I met Navy Commander Edes who drove us to Farnborough, the British experimental airdrome, where we saw two recently captured German aircraft, a J-88 and an FW-190. On our way back to London, we stopped at Windsor Castle and met Lord Wigram, who was very gracious and provided us with a personal tour of the famous castle.

On Friday, January 28, we left London for a tour of the Royal Canadian Spitfire fighter base at Digby, some 100 miles away in the countryside, under the capable guidance of Lieutenant Commander Pennyngton. At the entrance to the base, we met a Captain Davis who took over the escort, giving us the grand tour. I was then given a cockpit checkout in one of their new Spitfire fighters and given permission to fly one of them. To my disappointment, I could not take advantage of this opportunity, as our schedule did not allow time for it.

We then drove to a Royal Air Force bombing squadron in Fiskerton, which was under the command of Captain Grindell. I was invited to attend a briefing from an intelligence officer to the pilots and crew of a bombing mission that was to take off at midnight. However, before the briefing ended, the intelligence officer fainted, supposedly from mental exhaustion; he came to a few minutes later to continue the briefing.

At midnight Captain Grindell and I went to the control tower to witness the takeoff of British Lancaster bombers bound for a bombing mission over Berlin. In all, 663 aircraft from various squadrons rendezvoused over Dover, England, to participate in this mission. Our sleeping quarters were in a freezing Quonset hut. I woke up the following morning at 0645 and proceeded to the control tower to await the Lancasters' return. Suspense reigned supreme until the first bomber came into view at 0745, followed by the rest. The last few were badly shot up, just making it back "with a wing and a prayer," ending a successful mission.

We attended the debriefing of the pilots and crew members by intelligence officers. After the briefing, as a bonus, all hands were treated to a breakfast of real bacon and eggs. We then thanked Captain Grindell for his gracious hospitality and departed for London.

En route, we visited several radar nets and screens located in outlying farmhouses and barns, finally arriving in London at 1600 hours. Went to bed at my room in Golden Square for a good night's sleep. All went well until the air raid alarm sounded at 2045, which I ignored until the bombs started dropping closer and closer.

As I made my way to the shelter, I met some of our crew who were heading to the roof to get a better look at the show the Germans were putting on for us. We were amazed to witness the precision bombing, which concentrated on relatively small targets, in darkness and through heavy rain and the ever-present thick surface fog. The all clear sounded at 2130 hours; on the street I found the nose section of an incendiary bomb that I saved as a souvenir.

Sunday, January 30, 1944. I went sightseeing with our crew and observed the terrible devastation of bombed-out London, visited St. Paul's Cathedral, the Tower of London, London Bridge, the Lime House section, Marble Arch, and listened to the soapbox orators in Hyde Park, returning to Golden Square footsore and weary.

During the following days, we bid farewell to our British associates and the friends we had met along the way and, of course, my English relatives. Our departure was scheduled for an early morning takeoff on February 3.

Stage Six

At Last, Homeward Bound — 1944

First Leg: February 3

Because we were to be landing at neutral countries, we had to travel incognito, with no military uniform or identification. I was made up and dressed as an artist.

We motored to the Poole airport and boarded a British Sunderland short aircraft called the Golden Hind, piloted by Captain Petites for a 3-hour flight to Foynes, Ireland.



Second Leg



At Foynes we boarded a Pan American four-engine Boeing Clipper seaplane (number NC 18609), piloted by Captain Winsor with 26 passengers aboard for a 5 1/2-hour flight to Lisbon, Portugal, staying overnight at a beautiful palace call the Avis Hotel.

Third Leg: February 4

We departed Lisbon on the same aircraft with the same pilot for Dakar, French West Africa. We landed at Dakar after a 12-hour flight and stayed at the Pergola Casino - Dakar.

Fourth Leg: February 5

We departed Dakar with the same aircraft and pilot for a 12-hour flight to Natal, Brazil, crossing the equator at 1100 hours. We landed in Natal after dark and spent the night in a thatched hut.

Fifth Leg: February 6

We changed aircraft to Boeing Clipper NC 18606, piloted by Captain Schrader with 29 passengers and an estimated flight time of 6 hours to Belem, Brazil. We refueled at Belem and took off again for the 7 1/2-hour flight to Trinidad, Port of Spain in the British West Indies. All passengers slept in the aircraft for the night, anticipating an early morning takeoff for San Juan, Puerto Rico.

Sixth Leg: February 7

We left Trinidad for San Juan (a 4-hour flight), refueled, and took off again for an estimated 6 1/2-hour flight to Bermuda. Halfway through the flight, the number one engine quit; we continued the rest of the way to Bermuda on three engines. Because we had no idea how long it would take to repair the faulty engine, we endeavored to make arrangements with the U.S. Naval Air Station in Bermuda to fly us to the States. Luckily, they had a scheduled ferry flight to Patuxent River, Maryland, so we seized the opportunity.

Seventh Leg: February 9

In mid-afternoon, we boarded a Navy PBM (Martin Mariner seaplane number 8-602), piloted by Navy Lieutenant Fitzgerald, for our flight to the States. After we were airborne for 3 hours, the weather began to deteriorate, and it seemed the further we tried to penetrate the storm, the worse the situation became. The pilot decided to return to Bermuda.

Upon landing, we were informed that the Boeing Clipper was ready for boarding for our final destination, La Guardia Airport, New York. We immediately got seated and were in flight for 1-1/4 hours when the number two engine stopped. We returned to Bermuda for a 24-hour delay, staying at the Belmont Manor Hotel.

Eighth Leg: February 10

Our Boeing Clipper No. 18606 was back in service once again under the command of Captain Schrader. We were airborne at 0540 for the 6-hour flight to La Guardia with 27 passengers, landing uneventfully at noon.

Waiting for me at the airport was Lieutenant Gus Kliesch, U.S. Coast Guard, to fly me to my home station, Floyd Bennett Field, Brooklyn, N.Y., in a J4F-1 Grumman Widgeon Amphibian No. 210. After a 25-minute flight, we were welcomed home by all the station's personnel, with banners and flags flying. Some of the banners read; "Welcome Home and Well Done."

When everything quieted down, I was presented with a large mug of tea and a plate full of crumpets. Aaaaah! Home at last!

Stage Seven

After returning from the British-American testing, I was assigned as lead instructor in an intensive integrated pilot training program at the Coast Guard Helicopter Flight and Engineering School in Brooklyn.



There, I introduced students to shipboard operations through the use of a custom-designed platform, which simulated the movements of a ship at sea as closely as possible. The simulation deck could be set at either a 5 or 10 degree roll within a ten-second period. The unit, christened the USS Mal de Mer, was built by the Special Devices Division in Washington, D.C., under the supervision of Admiral Louis DeFlores, U.S.N.

Another clever innovation was a helicopter flight simulator built by the Atlantic Elevator Company. This training device was suspended by a system of rails installed in the ceiling of the Coast Guard hangar.





By the end of World War II, the Floyd Bennett School was training pilots and mechanics from all over the world. Trainees came from the U.S. Military, from manufacturers with Navy helicopter contracts, and from Britain, Australia, and New Zealand.

As with any aviation student-training program, accidents occur, particularly with a new type of aircraft such as the helicopter, and we had quite a few. On one occasion (December 2, 1944), I was checking out a group of advanced students at our auxiliary airport when one of our experimental XHOS-1 type helicopters (number 46447) arrived from Floyd Bennett Field, piloted by Lieutenant Gus Kleisch. He had been told to return me to Floyd Bennett to demonstrate our hoist-equipped helicopter for a group of VIPs. I strapped myself into a small jump seat behind the pilot. About halfway across Jamaica Bay, Kleisch yelled out that the controls were stuck. We crashed. The pilot got out safely, but I was rushed to a hospital with back injuries, requiring a month to recuperate the result of a frozen main carrier bearing in the rotor head.



On January 1, 1945, I returned to duty training students, doing air photography, demonstrating helicopters to various dignitaries, and taking part in search and rescue activities.

Stage Eight

Early Development of the Dipping Sonar

A small group of scientists were working at the Naval Research Laboratory in Washington, D.C., on an underwater sound-recording instrument system being designed to track submerged submarines. The principal designers were Dr. H. C. Hayes and his assistant, Dr. Jesse James Coop, Ph.D.

On April 7, 1945, initial testing of the equipment was conducted in Jamaica Bay, New York, with satisfactory results.



XHOS-HELICOPTER WITH DIPPING SONAR - 4/13/45 - FLOYD BENNETT - N.Y.



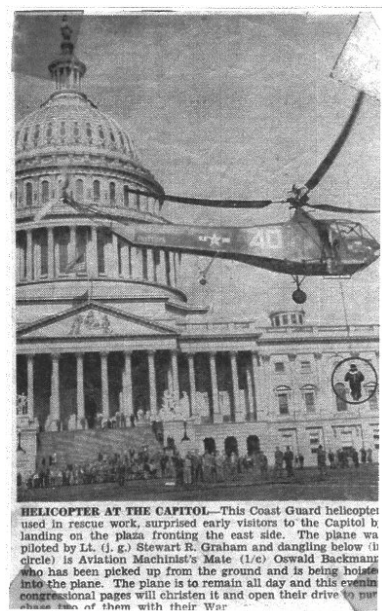
LT STEWART GRAHAM - U.S. COAST GUARD - MAKING THE FIRST LANDING ABOARD COAST GUARD CUTTER COBB

On April 13, I flew our XHOS 46448 to Groton, Connecticut, with the "Hayes" sonar-detecting apparatus installed, landing aboard the Coast Guard Cutter Cobb. Experimental exercises at sea were conducted for seven days, incorporating the use of a submarine from New London, Connecticut, and the antisubmarine underwater echo-ranging equipment as installed in the helicopter. It was decided to continue testing after making modifications to the equipment.

Stage Nine

On April 30, 1945, I flew HNS-1 helicopter number 39040 to Washington, D.C. and made the first Coast Guard helicopter landing at the U.S. Capitol Building plaza to open up the seventh War Bond Drive. The helicopter was christened "Page", in recognition of the Congressional Pages.

I spent the day demonstrating search and rescue techniques and giving rides to congressmen and senators.



HELICOPTER AT THE CAPITOL—This Coast Guard helicopter used in rescue work, surprised early visitors to the Capitol by landing on the plaza fronting the east side. The plane was piloted by Lt. (j. g.) Stewart R. Graham and dangling below (in circle) is Aviation Machinist's Mate (1/c) Oswald Backman who has been picked up from the ground and is being hoisted into the plane. The plane is to remain all day and this evening congressional pages will christen it and open their drive to put about 100 of them with their War Bonds.



*I had lunch here with some Senators
on April 30th 1945*

plus a few Senators

I was the guest of GENERAL FRANK E. LOWE - U.S. Army

United States Senate Restaurant

MENU

A LA CARTE

Due to the extreme shortage of butter it becomes necessary to use substitutes—THE MANAGEMENT

APPETIZERS

Little Neck Clam Cocktail	30
Cherrystone Clam Cocktail	30
Apple Juice	15
Grapefruit Juice	15
Tomato Juice	15
Ginger Juice	15
Orange Juice	15
Fillet of Blarney Herring in Wine Sauce	25
Chopped Clam Chow	40
Oyster Stew with Milk	40, with Cream 60

SOUPS

Senate Restaurant Old-Fashioned Bean	15
Potage Merguez	15

SANDWICHES

American Cheese	20	Peas and Butter	15	Egg Salad	25
Lettuce	15	Cheese and Olive	20	Fried Egg	20
Lettuce and Tomato	20	Schaefer	20	Liverwurst	20
Luauy Leaf	20	Roast Sugar Cured Tomatoes Hot	60		

SALADS

Hearts of Lettuce	25	Lettuce and Tomato	35	Chicken	20
Tomato Surprise	30	Potato	25	Combination	40
Fruit	20	Cook Meat	25		

DESSERTS

Fruit Jelly	15	Cup Cheese	10	Jello with Whipped Cream	15
Strawberry Cream Pie	15	Cup Fresh Custard	15	Ice Cream or Sherbet	15
Apple Pie	15	Pie à la Mode	25	Pie with American Cheese	20
				Ice, with cream 20	

Whipped Cream with any dessert other than Jello 5 cents Extra

BEVERAGES, ETC.

Coffee or Tea, Cup	10	Milk Toast	20	Milk or Buttermilk	5
Hot	10	With Cream	30	Strawberry	10
Instant Potatoes	10	Cheese	15	Egg or Buttermilk Toast	10
Lemonade	10	Cooked Oats	10		
Hot and Hot	15				

Sec. 13. PORTING. (a) Beginning August 1, 1945, each menu must have clearly and plainly written on or attached to it the following statement:
All prices are our selling prices, as below. By CFA regulations, our selling prices are based on our highest prices from April 4 to 30, 1945. Our menu or price lists for that week are available for your inspection.

Saturday, April 28, 1945 NOTE—AN EXTRA CHARGE WILL BE ADDED FOR NO SUBSTIT

Stage Ten

First "NASH" Buell HOS-1 Helicopter



Buffalo, N.Y.—Stewart on Ferry Flight from Detroit to New York (1945)

Between June and August 1945, I was assigned to test and accept new HOS-1 helicopters assigned to the Coast Guard as they came off the assembly line at the Nash Kelvinator Factory in Detroit, Michigan. I ferried some of them to Floyd Bennett.

From October to December 1945, I was on temporary duty at the Civil Aeronautical Administration Standardization Center in Houston, Texas, to undergo advanced instrument flying courses. When I graduated from this assignment, I returned to Detroit to resume testing and accepting new HOS-type helicopters.

Stage Eleven

Meanwhile, the Coast Guard had received a new 450-horsepower HO2S-type Sikorsky helicopter (number 75690) in January 1946. At the same time, the Naval Research Laboratory in Washington, D.C., reported that the revised dipping sonar equipment (now designated XCF sonar) was available for further testing. It was decided to install the sonar in the HO2S.

Installation began immediately and took approximately six weeks to complete. I was recalled from Detroit to assume the duty of test pilot for this operation. Initial testing of the helicopter and sonar was again conducted in Jamaica Bay.

On March 12, after minor adjustments to the equipment, I flew the 75690 to Key West, Florida, naval base with my mechanic, Merwin Westerberg.



The flight from New York to Key West was recognized as the first long-distance flight of this type (HO2S) helicopter. The sight of the machine in the air and on the ground created quite a stir among the population along the Eastern seaboard. I followed the coastline, stopping at various military, commercial, and civilian airports en route. The fun usually began when I requested landing instructions from the tower operators. They would invariably recite the routine fixed-wing landing procedures. However, by the time I had them convinced that I did not require a runway to land on, I was already at the airport and on the ground, much to their amazement. For airport personnel, that flight was probably their introduction to the rotary-wing type of aircraft, and a new era in aviation history.

We arrived at Key West on March 16, 1946.

Stage Twelve

U.S. Navy Experimental Squadron (VX-1)

The Coast Guard pilot, his mechanic, and the rotary-wing machine did not fare well at the Navy fixed-wing base. As members of the Coast Guard, we did not feel welcome at the Key West naval base because our orders had high priority, meaning that our requirements, which were many, had to be fulfilled without delay. This interrupted the daily routine of the base, which was resented. We were considered outcasts from the Wright brothers' era, evaluating a makeshift device to track submarines.

To carry out my orders, I requested the following: an LST from which to operate the helicopter; a submarine as our target; a destroyer to serve as the project control vessel, taking duplicate sound measurements to compare results with the helicopter's dipping sonar; and, last, a crash boat in case the helicopter went down.

The authorities considered my requirements excessive. However, after consulting with all the department heads involved, I convinced them that my request was essential for a comprehensive evaluation of the helicopter-dipping sonar combination project. I had the feeling these people thought the program was doomed from the start. It was up to us to prove them wrong.

Dr. Coop, the sonar operator, and I were assigned to the bachelor officers' quarters and my mechanic was assigned to the enlisted quarters, which was within walking distance to the seaplane base hangar, where the helicopter was located. Logistically, we were involved with various facilities throughout the base including the submarine base, the naval air station at Boca Chica, and the naval seaplane base at Key West. It was quite a surprise when we were assigned a Jeep vehicle for our transportation to these facilities.

During the early stages in the development of the helicopter-dipping sonar program, as with many inventions out of the ordinary, the people involved were looked upon as being out of the ordinary also. Especially the aviator who would dare to fly such a contraption, relying on rotating wings for flight. After flying for several hours in those early machines, I would alight from the aircraft and walk with a one-per-rev beat for several minutes until I was able to regain control of myself and unclench my white fists to get the blood circulating once again. It was up to us, as pioneers, to prove not only to the military but to civilians as well that helicopters were here to stay. Even then, we were laughed at.

Each morning before dawn, my mechanic and I would rendezvous at the seaplane base hangar. Together, we pushed open the huge hangar doors and rolled the helicopter out to the run-up pad. After a preflight inspection, we would get airborne and fly directly out over the water on a flight path chosen for minimum disturbance to the sleeping populace at that ungodly time of the morning.

Landing on the LST, where our sonar operator was aboard, became routine as she was proceeding out the channel to the assigned operational area in the Gulf of Mexico. The cockpit layout of the HO2S helicopter was of a tandem configuration piloted from the rear seat position; the sonar operator occupied the front seat to conduct his mission. Dr. Coop was over six feet tall, thus blocking out my forward visibility. This helicopter was inherently unstable and hard to fly because of extreme flight control forces. I alleviated some of these undesirable features by securing one end of a bungee cord to the floorboard, and the other end to a selected position on the control stick to be controlled by the pilot. Nevertheless, it still took shear strength and determination to maintain a good hovering position with the sonar transducer lowered to a depth of 60 feet.

Later, Ensign William Coffee, U.S. Coast Guard, relief pilot, and Lieutenant Roy Rather, U.S. Navy, relief sonar operator, joined the detachment. When they became familiar with the program, full-scale operation began on March 22, 1946. The program started with a U.S. submarine submerged between Key West and Cuba. The submarine was located by tracking ranges, which were considered very well. These exercises continued almost daily.

On one occasion, Dr. Coop was tracking a submerged submarine in the Gulf of Mexico and conducting a passive listening test, at a range of 3,600 yards, when, suddenly he heard a series of Morse code signals that he could not interpret. He continued recording the message until the submarine surfaced. Dr. Coop had the pilot return to the LST, believing the operation was over for the day.

As was the practice at the end of each day, the recording tapes were played for evaluation among the project officers. When the Morse code section was played, an officer instantly recognized the message as "submarine has sprung a leak, am surfacing." Ironically, the surface ships assigned to help the submarine in case of emergency did not hear the urgent underwater message. The lesson learned was that it was an advantage to operate a sonar at the much greater depths used by the helicopter-dipping tests than at the shallow depths employed by the surface vessels. This turned out to be particularly true in conditions of negative gradient {temperatures and, thus, sound velocity decrease with depth}, which refracts underwater sound downward under shallow receivers.

Testing continued until May 20, 1946 when the airborne XCF sonar was put through its final evaluation upon the arrival of a captured U-21-type German submarine (number 2513). The American crew that brought the submarine across the Atlantic Ocean learned that it was faster than an American submarine

and could exceed 20 knots while submerged, The U-boat was very streamlined/ having no deck structures other than the conning tower.

Tests were conducted to determine the underwater noise level of the German submarine compared to a U.S. fleet-type submarine. The subs took stations 1,000 yards apart and ran parallel to each other at a speed of 6 knots, at a depth of 100 feet. The sonar-equipped helicopter hovered in the general area in which the subs dove. Upon dipping the sonar transducer below the sea, Dr. Coop immediately picked up the typical high noise level coming from the U.S. submarine's huge hull, deck stanchions, chain railings, gun mounts, and antennas. Even though it made a detectable noise, the U-21 ran extremely quietly by comparison» Echo ranging and tracking exercises continued on the two targets throughout the day, until sufficient data was obtained to conclude the XCF testing.

When the Key West test results were analyzed, even the most skeptical decision makers were convinced that the helicopter-mounted sonar was the answer for the antisubmarine warfare program. Still, the sonar would have to undergo major modifications for maintainability and supportability if it were to become operational in the fleet. To accomplish this challenge, the underwater sound equipment would have to be redesigned to be more compact and functional, so the Navy contracted a leading electronics company to manufacture a lightweight dipping sonar tailored specifically to be mounted in helicopters. The Navy would be advised when the contract was completed and ready for testing.

With our assigned mission accomplished, Coffee, Westerberg, and I returned to Floyd Bennett Field; Dr. Coop and Lieutenant Rather returned to Washington, D.C., in early June 1946.

I would be remiss not to mention the fact that Dr. Jesse James Coop was a typical philosopher - he wore thick tortoise-rimmed eyeglasses, was tall in stature and rather unkempt in appearance, but always calm and patient under most circumstances. One exception was the time my wife, Mae, invited him as our guest to a cocktail party. As he was introduced to the gathering, most of the guests wanted to know what the Ph.D. actually stood for in relation to underwater sound research. Finally, Dr. Coop called attention to all hands and then announced that he wanted to make it perfectly clear what his title meant. He said in a loud and clear voice, "I'm only going to say this once, so listen up. Ph.D. stands for Pretty Hot Daddy, so all you ladies, watch out." That was the spark needed to liven up the party.

Stage Thirteen

During the time I was at Key West, Admiral Russell Waesche, Commandant of the Coast Guard, and Captain William Kossler, head of Coast Guard Aviation Engineering, both staunch advocates of promoting the helicopter, had died. The loss of these two essential men at Coast Guard headquarters left Captain Erickson, one of the most prominent and respected individuals and number one Coast Guard helicopter pilot, virtually alone against rotary-wing opponents at headquarters and elsewhere. This was the opportunity the vigorous antagonists were waiting for. We were at their mercy. Without any warning whatsoever, Erickson and I, plus a few dedicated enlisted men, received permanent transfer orders to the Coast Guard Air Station in Elizabeth City, North Carolina. Before we even left Brooklyn, word had gotten to us that the transfer was designed to downgrade the helicopter program as a passing fancy that would never be introduced into Coast Guard aviation. Even people of note believed helicopters would be useless.

Dayton, Ohio, 15 January 1909

Like all novices, we began with the helicopter (in childhood) but soon saw that it had no future and dropped it. The helicopter does with great labor only what the balloon does without labor, and is no more fitted than the balloon for rapid horizontal flight. If its engine stops it must fall with deathly violence for it can neither float like the balloon nor glide like the aeroplane. The helicopter is much easier to design than the aeroplane but it is WORTHLESS when done.

Wilbur Wright

There are times when the most brilliant thinkers can be wrong.

The outlook for us as helicopter advocates was very bleak and disheartening indeed. We were assigned an abandoned Navy hangar with no facilities, which had sheep manure stored in it. It took more than a month to make it livable. The building was remotely located from the air station's operations even though we were part of that command. We were treated as outcasts. Support from the air station was practically nil, thus creating immediate conflict between Erickson and the commanding officer.

At about this time, the Coast Guard Air Station in Biloxi, Mississippi, was being decommissioned. Commander Erickson and I flew there with one purpose in mind: to acquire all shop machinery, tools, and office equipment to satisfy our requirements. This was accomplished, and we were soon in operation.

At the time, the Coast Guard aviation had no search and rescue operational helicopters. The helicopters they had were used indifferently for pilot proficiency. It was up to us to alter the rotary-wing machines we had on hand to accommodate the various components we were designing to enhance the helicopter's potential for search and rescue operations.

We garnered recognition and publicity almost immediately, much to the dismay of the air station. This was due to the novelty of the helicopter as we demonstrated the machine to the populace along the coastal regions of Virginia and the Carolinas.

Stage Fourteen

"The Last Flight"

This was the first major rescue mission in Coast Guard aviation history whereby helicopters, fixed-wing aircraft, U.S. Coast Guard, U.S. Army, and Canadian personnel were employed successfully to carry out an operation. The incident occurred outside of the United States when a Belgian commercial airliner crashed in Newfoundland, Canada, in September 1946. The following is an account of the chain of events.

September 17, 1946

A Belgian four-engine passenger aircraft with identification number OOCBB on the rudder and SABENA on the vertical stabilizer was airborne from Brussels with 37 passengers and a crew of 7. The transatlantic flight to New York with scheduled refueling stops at Shannon, Ireland, and Gander, Newfoundland, was considered routine until it arrived over Gander.

September 18

At 3:37 A.M., the pilot, Captain Jean Ester {formerly of the RAF and the Belgian Air Force), obtained landing instructions from the control tower operator. The weather was bad; rain and fog shrouded the entire area, requiring an instrument-landing approach to the airport. During a precision turn to the assigned runway, communications were lost between the Gander approach controller and the aircraft. After several futile attempts to obtain voice contact, an overdue aircraft alert was broadcast throughout the immediate area. Search and rescue units were advised of the inclement weather, which precluded an air search. However, a Coast Guard PBY amphibian aircraft and its crew were airborne from Argentia, Newfoundland, and attempted to search the area but were forced to abort the mission due to heavy ground fog. They landed at Gander to wait until the weather improved.

September 19

Several air searches were conducted under marginal weather conditions, with negative results.

September 20

Conditions improved. A TransWorld Airliner (TWA) during a final approach to the Gander airport spotted the crashed and burned remains of the missing Belgian aircraft. The large "SABENA" letters on the vertical stabilizer positively identified the wreckage. The pilot radioed the Gander tower operator of the sighting, reporting that several survivors were observed near the wreckage. The location was approximately 27 miles southwest of Gander, in a densely wooded area, close to the top of a mountain. The TWA captain determined it to be inaccessible to any kind of surface vehicle to reach the survivors.



A ground search party was immediately organized, consisting of Coast Guard and Army personnel with a native Indian guide. They brought with them inflatable rubber life rafts, walkie-talkie radios, along with the standard search and rescue equipment. To expedite their trip to the crash site, a Coast Guard amphibian aircraft landed them at a nearby lake. They then walked to a stream, inflated the rafts and, after a harrowing, pell-mell journey down the rock-strewn rapids, finally arrived at the base of the mountain.

The searchers proceeded up the rugged terrain, cutting a path through the thick underbrush. At dusk, they reached the survivors. The ground party had been vectored to the scene by a Coast Guard aircraft circling overhead, communicating via the walkie-talkie radios. The survivors were huddled together beneath the tail section of the airliner. Food, water, medical supplies, clothing, blankets, and extra batteries for the two-way radios were air-dropped.

Captain Samuel P. Martin, a U.S. Army medical doctor, who was a member of the search party, took command of the situation and worked tirelessly to treat the injured with the medical supplies that had been air-dropped. Some of the victims were severely burned; others had broken bones; and all were suffering from exposure, hunger, thirst, and insect bites.

When the captain had them resting fairly comfortably, he contacted the orbiting Coast Guard aircraft to report his findings: "18 survivors, of which 14 are stretcher cases, 4 ambulatory, and 26 dead. Condition of the injured demands immediate hospitalization. After a thorough survey of the situation, I suggest evacuation via helicopter, due to the remoteness and impenetrability of the terrain."

Meanwhile, September 20 was a typical working day at the U.S. Coast Guard Rotary Wing Development Unit, located serenely in Elizabeth City, North Carolina. Commander Frank A. Erickson, the skipper and number one Coast Guard designated helicopter pilot, was on assignment in New York. I was his executive officer and the number two designated helicopter pilot when I received a telephone call at 2:45 PM from Captain Richard Burke, U.S. Coast Guard, the Eastern Area Air-Sea Rescue Coordinator.

He relayed the details regarding the sighting of the crashed Sabena airliner and instructed me to have a helicopter disassembled in such a way as to fit into the cargo compartment of an Air Force C-54-type transport aircraft. Similar instructions were given to the Coast Guard Air Station in Brooklyn, New York, and that a second aircraft would be provided to airlift their helicopter.

When word reached Commander Erickson that helicopters were being assigned for a major rescue mission in the wilderness of Newfoundland, he immediately made arrangements to return to Elizabeth City. By the time Frank arrived (about 7:00 PM), my crew and I had the disassembled helicopter neatly arranged on the hangar floor with all necessary components, tools, and spare parts awaiting the arrival of the cargo aircraft.

The military air transport arrived during a torrential downpour, which didn't deter the crew from expeditiously loading the helicopter and essentials into the huge cargo compartment. When all equipment was secured and the assigned personnel were aboard the aircraft, we received our flight clearance to Newfoundland. At 11:25 PM, we were airborne for Gander. The rain continued until we broke out in the clear as we approached Atlantic City, New Jersey, at 12,000 feet altitude. The rest of the flight was uneventful.

September 21

Arriving in the vicinity of Gander (6:25AM), we were vectored by the approach controller to the crash site and circled the area several times to become familiar with the terrain in which we had to operate. After landing at Gander, we experienced some delay in-off-loading our helicopter because the only one crane available was in use unloading the helicopter from Brooklyn which had arrived about twenty minutes before we did.



Both helicopters had to be reassembled and test-flown, which took most of the day. The four helicopter pilots (Erickson and I, along with Lieutenants August Kliesch and Walter Bolton from New York) took advantage of the time by having another look at the crash site from a Coast Guard aircraft. During this flight we were able to determine the best possible procedures to use to expedite the evacuation of the survivors. A relatively grassy area on top of the mountain close to the Unloading nose section wreckage seemed to be an ideal location from which to operate the helicopters.

By late afternoon, one machine had been reassembled and test-flown satisfactorily. Immediate evacuation of the most seriously injured was begun and continued until nightfall. However, the landing sites, which appeared to be ideal from the air, turned out to be muskeg and was not suitable for the wheel-type landing gear installed on the helicopters. The pilot was taken by complete surprise when he made the first landing on what appeared to be a well-groomed grass mat. The wheels sank at least eight inches into the muskeg ooze. It required full power to break loose from the muck. We realized it was necessary to provide a platform for the helicopters to land on.



Lt. STEWART GRAHAM ABBEVIN, MAKESHIFT PLATFORM WITH SURVIVOR

September 22

At the break of dawn, lumber was air-dropped to the clearing, and members of the ground party constructed a platform. Both helicopters were now deployed in the evacuation. However, valuable time was being used flying victims, one at a time, the 27 miles to Gander in the slow single-passenger helicopters.

A lake (Wolf Lake), large enough for the Coast Guard amphibians to operate from, was found approximately 7 miles from the Sabena wreckage. These aircraft could be used to transport several survivors at a time to Gander, which would certainly save time. The helicopters shuttled the survivors the short distance from the mountain to the waiting aircraft at the lake, and eventually the remaining victims were transported in this manner.



A total of 44 persons were aboard the Sabena aircraft when it plowed into the mountain; 18 miraculously survived. The dead were buried in the vicinity of the crash, while burial services were conducted from an aircraft circling overhead. By nightfall, all of the remaining survivors, ground support personnel, and equipment were transported to the Gander airport.

September 23

A representative of Sabena arrived from Belgium to investigate the wreckage. I flew him to the scene and, after his mission was completed, we returned to the Gander airport. This flight terminated the Coast Guard's successful participation in this first-of-a-kind major rescue operation.

The helicopter from the Rotary Wing Development Unit was transferred to the Coast Guard air detachment in Argentia for search and rescue operations in Newfoundland; the other machine was returned to Brooklyn.

Notes of interest:

Among the survivors, Etienne Perier (age 14) and his sister, Jeanne (age 16), were the children of Golbert Perier, general manager of Sabena Airlines, which owned the crashed plane. Their mother, Marie, and a sister, also Marie (age 19), were killed in the crash. John King (age 20) was the younger son of the Chinese ambassador to Belgium. Helen Ruth Henderson (age 47) was an executive of the International Girl Scouts and kept up the morale of the survivors while awaiting rescue. Jeanne Rooki, one of the hostesses, also boosted morale as she rendered first aid to the victims, even though she was severely injured herself. She told three of the survivors who could walk to try to reach the Gander airport. They penetrated the dense woods about a mile but returned, fearful of getting lost. The other survivors were George Cauchie, John DesChuyffeleer, Walter Devos, Philippe Henricot, Charles Kronengold, Selma Kronengold, Raymond Libeert, Renee Libeert, Suzanne Martin, Jeanne Polak, Rudy Revil, Milton Tonglet, and Elizabeth Wanderer.

The little band of survivors agreed that the spot in the forest where Captain Martin had bandaged their wounds and improvised splints on their broken bones should be called "St. Martin's in the Woods", as an expression of their deep gratitude to him and to all the military and civilian individuals for their heroic work.



Lieutenant Commander Larry Davis, U.S. coast Guard, skipper of the air detachment in Argentina, vectored the search party to the wreckage and participated in flying the victims to safety from the lake. Lieutenant Commander James Schrader flew the second amphibian during the rescue mission.

Captain Samuel P. Martin was a veteran explorer and former member of the Barnes Hospital staff in St. Louis, Missouri. Doctor James Pato of the Sir Frederick Banting Hospital, where the survivors were treated, praised Captain Martin's work as almost superhuman.

The aviators received the medal, Knight of the Order of Leopold, from the Belgian government, and the Air Medal from the U.S. Coast Guard. The crew members received similar recognition.

RESCUE SHIP AT GANDER

By H. L Phillips

*It's the plane that has the "know-how"
And the ship that has the knack;
It's the handy man of flying
With some staff the others lack;
It's the nursemaid and the doctor
And the angel from the blue ...
Tho' it isn't much on speeding,
It has lots of "I-can-do."*

*Sing of clippers and of transports,
Sing of fancy ways and speeds . . .
It's, this pokey, plodding "copter"
That can top them in good deeds;
Sing of size and grace and beauty,
Cite the records great ships clinch . . .
It's this "windmill full of gas pains"
That can do things in a pinch!*

*Clumsy and not much to look at . . .
Awkward, gangling, slow and odd.
Yet a messenger of mercy
And a courier from God . . .
High toned liners, all de-luxurs,
Had three strikes on 'em, and more ...
But the "windmill" whispered "Steady!"
And came into to do the chore.*

*Eyes that stared from mangled bodies
Into skies that seemed so bare
Won't forget the ugly duckling
Bringing succor quickly there ...
Minds that knew a frightful anguish,
How they'll hold the memory
Of this ship that heard a prayer
On a thumbworn rosary!*

*Just a flying bunk of plumbing . . .
Just a pinwheel and a trunk ...
Just a sort of spinning clothes-rack
Called by big plane boys "that punk" ...
Just a sort of maid-of-all-trades
Slow as if she had the gout ...
But she got there to the dying
And she took the wounded out!*

*Good Samaritan of aircraft,
With a slightly tilted crown,
Clumsy angel with the know-bow
When the vital chips are down ...
Here's our brimming glass uplifted;
Tho' on beauty you ain't much, .
Here's a snifter to you, sister, For you've got
the human touch!*

Published through courtesy of New York Sun
AMERICAN HELICOPTER
December - 1946

Stage Fifteen

On September 25, 1946, Commander Erickson and I returned to Elizabeth City. We were surprised to learn that during our absence we had been assigned (from storage) a Grumman J4F-2 Widgeon amphibian (number 33956) to be used for administration purposes. Our total rotary-wing aircraft allotment consisted of 10 HOS, 3HNS, and 1 HO2S Sikorsky helicopters for search and rescue evaluation.

Due to the publicity we received from the Gander rescue mission, we were besieged with requests to demonstrate the helicopter to the military as well as to civilians. When it was feasible for us, we tried to accommodate these requests. Dignitaries often arrived for demonstration rides. Commander Erickson was in his glory showing these people just what the helicopter could do, claiming (to me) that it was worth our while to maintain good relationships with the other military establishments as well as with the general public.



On one occasion, a heavyweight VIP showed up for a demonstration ride on a very hot day with no wind blowing. Commander Erickson tipped the scales at well over 200 pounds. When takeoff was attempted, the helicopter just sat there, straining at the bit but not flying because of the heavy weight and an underpowered engine. Embarrassed, Erickson shut the machine down, leaving a bewildered passenger strapped in his seat, and asked me to give it a try. I weighed only 135 pounds and that made the difference for a successful takeoff and demonstration, much to the satisfaction of the dignitary.

Later, Commander Erickson said to me, "Stew, from now on I will promote the helicopter and you do the flying". Teamwork in this manner continued successfully throughout our tour of duty at Elizabeth City. The Picture above is typical with Captain Erickson promoting the helicopter to a group of dignitaries while I do the demonstrating.

ROTARY WINGS AND OTHER *Things*