A BRIEF HISTORY OF COAST GUARD AVIATION

By CAPT F. A. Erickson (Ret.) '31

A talk delivered at Air Station Houston in connection with the celebration of Coast Guard Aviation's 50th Anniversary.

It took the combined efforts of a great many people to bring Coast Guard Aviation to its present state of development. Obviously I can't even begin to cover the contributions of all of these people in just a few minutes so I would like to single out those officers who initiated separate and distinct phases in aviation over the past 50 years.

It all started in 1915 on the Coast Guard Cutter ONONDAGA based at Hampton Roads, Va. when LIEUT Elmer F. Stone and the engineering officer, LIEUT Norman Hall convinced their commanding officer Captain B. M. Chiswell that disabled vessels could be located more quickly from an airplane than from the crows nest of a relatively slow moving vessel. Thus was born the concept of using aircraft for the eyes of Coast Guard vessels.

Captain Chiswell borrowed a plane and pilot from nearby Curtiss Field and together they flew a number of missions to test the idea. When they had proved to their own satisfaction that they were right, they set about selling Coast Guard Headquarters on the idea. That they were successful is evidenced by the legislation passed by Congress just 50 years ago, which authorized the establishment of 10 Coast Guard air stations along the coast lines of the United States.

Stone was selected as the first Coast Guard officer to receive flight training at the new Navy flying school at Pensacola, Florida. He graduated as Naval Aiviator No. 38 and received his designation as Coast Guard Aviator No. 1. He was soon followed by five more Coast Guard officers who are listed among the first 60 Naval Aviators. In the meantime LT Hall was assigned to the Curtiss Plane and Motor Company for training in aeronautical engineering.

Before any action could be taken to establish the authorized air stations, the United States was at war with Germany. The Coast Guard became a part of the Navy and all Coast Guard aviators were assigned to Navy aviation units for the duration.

After the war, when the Coast Guard returned to the Treasury Department, LIEUT Carl C. von Paulsen, who was to play such an important part in Coast Guard aviation, was assigned to Pen-

The period after yard availability would be spent on underway training. Many skippers regard this training as "underway scoring." Operations permitting, the ship should remain at this underway training as long as necessary to generate an acceptable level of performance. The ship would then be certified as ready to perform all tasks considered part of the Coast Guard's mission.

A wild eyed dream? Definiely not. The Royal Navy has been doing it for years with conspicuous success. But the Royal Navy has had a pool of manpower at its manning depots, so that when a man must be replaced on a ship due to illness or other emergency, his replacement comes from the depot, not another ship. In the Coast Guard, on the other hand, with no reserve pool of manpower, replacement of one man requires a man to be transferred from another unit, who in turn must be replaced. This sets up a series of moves affecting many units.

Difficulties in implementing this system do exist, including the establishment of an adequate manpower pool. However, overcoming them and instituting the cutter team concept would enable the Coast Guard to make its motto "Semper Paratus" truer than ever.

To assist the author in further developing this study, please answer the questions below and mail to:

COMMANDANT (OSR-1)
1300 E Street, N. W. (7-15)
Washington, D. C. 20226

1. NAME OF UNIT?
2. How many enlisted men authorized?
3. How many actually present?
4. Average length of time in Coast Guard?
5. Average length of time on board?
6. How many officers authorized?
7. How many actually present?
8. Average length of time in Coast Guard?
9. Average length of time on board?
10. What is the general attitude to this method of manning ships?

( ) favorable ( ) unfavorable ( ) Don't know

Comments:

sacola for flight training. An air station was established at Morehead City, N. C. with six wartime planes loaned by the Navy in 1920. But because of limited budgets in the post war period, it was foredoomed and discontinued as an air station the following year.

All Coast Guard aviation personnel were transferred to other duties except for CDR Stone, who remained on duty with the Navy for several years. He won fame as the copilot of the NC-4 on the first flight of an airplane across the Atlantic, but his work in developing the powder catapult used by the Navy was a much greater achievement. Upon completion of this duty, he was assigned to duty as commanding officer of a Coast Guard destroyer.

In May 1925, LCDR von Paulsen, who was then commanding officer of the Coast Guard patrol base at Gloucester, Mass. borrowed a UO plane from the Navy and proceeded to use it to augment his patrol boats in operations against the rum running fleet. His operations were so successful. that Headquarters authorized the procurement of five new airplanes. They consisted of two Vought seaplanes and three of the new Loening amphibians. The amphibians proved to be the most suitable for Coast Guard work because they could be handled so much easier than the seaplanes from Coast Guard bases with small crews.

It was in 1930 that aviation really became a part of the Coast Guard. Commanders Stone and Hall were reassigned to aviation duty. Together with von Paulsen, they became a very effective development team. Also at that time an air station was established at Cape May, New Jersey, and construction was started on a new air station at Miami, Florida. The first aircraft purchased under the new program were three RD-1 Douglas Dolphin amphibians. They were so successful that orders were placed for 10 more dolphins in 1933. Also at this time an order was placed for 9 Grumman amphibians. They were designed by LeRoy Grumman who had been a designer for the Loening Company. He organized his own company when Grover Loening decided to retire. His first plane was the JF-1 amphibian which he built for the Navy. Commander Stone concluded that this plane would have less drag with the Wright Cyclone even though this engine had a greater frontal area. Thus he had the Coast Guard JF-2s fitted with Cyclone engines. It out performed the JF-1 and all other amphibians of that time. Cdr. Stone demonstrated just how much better, by setting a worlds speed record for amphibians in this plane. Shortly after being assigned to duty

as commanding officer of the new air station at San Diego in 1937, he suffered a fatal heart attack.

In 1932, the Coast Guard in conjunction with the General Aviation Company of Baltimore, Md. developed the FLB FLYING LIFE BOAT which was especially designed for operating from the open seas. It was a high wing seaplane with pusher engines mounted above plywood wings. It had retractable beaching gear that gave it all of the flexibility of an amphibian in taxing on ramps and parking areas at air stations. Its flying qualities left something to be desired but it had some very good features such as freedom from spray when taking off from rough water and a very rugged construction. How rugged is illustrated by one case in which an FLB lost a wing tip float when landing 250 miles at sea in the Gulf Stream off the Florida coast where it was abandoned. But it did not sink immediately. In fact it was sighted ten days later still drifting in the Gulf stream having covered a distance of approxximately 1000 miles in that time. The FLBs accomplished some fantastic rescue missions in their time. It was the best seaplane that the Coast Guard ever had.

There were less than 20 aviators in the Coast Guard when my class, '31 reported in at Pensacola on April 1st, 1934. Several members of the class of '30 were still in training when we reported. There were so few officers available for training that 30 Coast Guard enlisted men were assigned to our class. The eighteen enlisted men who received their wings not only became excellent pilots but they were all commissioned early in the war.

Later that year several more Coast Guard officers reported for flight training. Among them was Lieut. Commander William J. Kossler who had instructed at the Academy in thermodynamics and electricity when I was a Cadet. On graduation from Pensacola, he was assigned as commanding officer of the Coast Guard Air Station, Charleston, S. C. A couple of years later, he was assigned to the Hall Aircraft Factory at Bristol, Pennsylvania as inspector for the PH-2 flying boats which were to replace the old FLBs. Kossler was very dissatisfied with the Hall boats and with the whole practice of landing aircraft at sea which had cost the lives of several Coast Guard fliers. He was relieved from these duties when he became ill from the strain he was under.

When he had recovered, he was assigned to duty as Chief of the Aviation Engineering Division at Headquarters. In an article in the Coast Guard Magazine he had the following to say about the period:

Following enlisted service in the Navy, Capt. Erickson attended the Naval Academy for one term, (Steam - 2.37). This was followed by brief enlisted service in the Coast Guard and appointment to the Academy, from which he graduated in 1931. After three years of line duty he went to Pensacola for flight training, graduating with Coast Guard Aviator Designati n No. 32 in 1935. He served at Miami Air Station before commanding the Air Detachment at Oakland, Calif. This tour was interrupted by aviation duty aboard HAMILTON during her 1938 Bering Sea Patrol. In 1939 he reported to TANEY for aviation duty, with the plane based at NAS, Pearl Harbor. In August he was transferred to NAS, Pearl Harbor for duty as Asst. Operations Officer and O/C Utility Unit. In 1942 he became X.O. at Brooklyn Air Station. In April 1943 he was assigned to the Sikorsky Plant in Bridgeport, Conn. There he received designation as Coast Guard Helicopter Pilot No. 1. In December 1943 he became CO Brooklyn Air Station, which was designated as a helicopter training and development base by CNO. Following WWII Capt. Erickson commanded the Rotary Wing Developmest Unit at Elizabeth City, N. C. and served at Naval Air Test Center, Patuxent, Md. In 1951 he had temporary duty with the Air Force in Japan and Korea. This was followed by duty at HQ, with the Air Navigation Development Board in Washington. and in the 3rd District. In 1955 he retired from active Coast Guard duty in order to remain in an active flying status as a commercial helicopter test pilot. In 1962 he was grounded because of a diabetic condition. He is presently employed by Brantly Helicopter Div. of Lear Jet Corp. in an engineering capacity.

Capt. Erickson is married to the former Betty Martin of Tacoma, Wash. They have two daughters.

"Considering the time at which these planes (the FLBs) were designed and built and the lack of much previous knowledge or experience, they were a remarkable development and the persons who were responsible for the ideas incorporated deserve a great deal of credit. It is unfortunate perhaps that further improvement was not practical. The manufacturer went out of business and the whole trend of aviation was toward higher speed performance in the air. That was directly opposite to the Coast Guard requirements for this type work. The cost of developing and building a few ships of this type was very high and its justification was questionable considering the volume of missions of this character. It therefore became necessary for the Coast Guard to attempt to adapt rather obsolete available designs to our needs. This did not prove satisfactory and it became

necessary finally to admit that we were attempting to do a difficult job with inadequate tools and to confine our activities at least for the present to more useful, if less spectacular missions."

As Chief of the Aeronautical Engineering Division. Captain Kossler attended an interdepartmental meeting in 1940, which was held to investigate the practiacbility of helicopters for government use. He immediately recognized the helicopter as the FLYING LIFEBOAT that we had been striving for. He even had sketches made of a flying lifeboat with rotors at each end long before Piasecki submitted his proposals for the tandem configuration. It was on Kossler's recommendation that the Navy awarded Piasecki a contract to build the XHRP helicopters.

The first helicopter to have military capabilities was the Sikorsky XR-4 which was built for the Army Air Corps. It made its first flight in January, 1942 and in May, 1942, it was flown from Bridgeport, Conn. to the Wright-Patterson Air Base in Dayton, Ohio.

In 1942, the Coast Guard was operating under the Navy, hence it was necessary to go through Navy channels for the procurement of new aircraft. Apparently some top officers in the Coast Guard were reluctant to ask the Navy for helicopters for life saving purposes. Bill told me that the answer to his request was "Hell Bill the Navy isn't interested in saving lives. All they want is to get on with the war.'"

Kossler told me of his experience on a visit to Floyd Bennett Field in June, 1942 shortly after I had reported there for duty. I had read about Sikorsky's work prior to the war while stationed at the Naval Air Station, Pearl Harbor. After flying a JF-2 from a cutter on duty in the Bering Sea, I saw great possibilities for an aircraft that could be operated from the deck of a small ship.

A few days after Captain Kossler's visit, his assistant Lieut. Bill Kenley arrived at the Air Station. At lunch, he casually mentioned that he had an appointment with Mr. Igor Sikorsky and wondered if someone would care to fly him to Bridgeport. I didn't realize that his little pitch was made to find out if I were really interested. Needless to say. I took the bait and we were soon in the air on our way to Bridgeport. It was the 26th of June, 1942 a day I will never forget. I was fascinated with both the VS-300 and Mr. Sikorsky, and jotted down every bit of information that I could during the few hours that we were there. At home that night I started drafting a report to Headquarters. It took me most of two nights to outline my proposals. My com-

Left: CDR F. A. Erickson demonstrates the helicopter hoist with Mr. Igor Sikorsky in the sling. Brooklyn Air Station, August 14, 1944.

Right: Captain William J. Kossler. The inscription reads: To Eric, the CG's No. 1 *Windmiller. Bill* —*Turner Photo*

manding officer, Commander Archie Burton slapped a forceful endorsement on my letter, and the District Commander, Rear Admiral Stanley V. Parker, who was the senior officer in the first Coast Guard class at Pensacola in 1916 topped it off with an equally strong endorsement.

Since efforts to sell the helicopter as a life saving device had not been successful, I stressed the application of the helicopter as an anti-submarine weapon which could be operated from ships in convoys. This was the approach that was needed to sell the Navy, for within a week the Navy requested that four of the helicopters being built for the army be assigned for evaluation for anti--submarine duties.

In November, 1942, Admiral Parker, Captain Kossler and I flew to Bridgeport to witness a flight demonstration that Mr. Sikorsky put on for the Admiral. A few days later, I received a copy of a personal letter that Admiral Parker had written to Admiral Waesche. In it, he urged the Commandant to fly up to Bridgeport to see for himself. He arrived at Bridgeport on 13 February, 1943 and witnessed a very impressive demonstration. That brought action because after a conference with Admiral King who was both CNO and Commander in Chief of the U. S.

Fleet CNO directed that 23 Sikorsky HNS trainers, 100 HOS and 50 HO2S helicopters be procured for the Navy. His directive assigned the responsibility for developing the anti-submarine operating procedures to the Coast Guard. In this connection a project was initiated in cooperation with the Naval Research Laboratory, Anacostia, D. C. to adapt the Hayes Anti-Sub underwater sound detection equipment to the helicopters. The first tests on the "DUNKING SONAR" were run in February, 1945 on an HOS helicopter. They were successful and led to the development of several DUNKING SONAR squadrons. Unfortunately this equipment was not ready in time to play a part in World War II, however the development of the helicopter rescue hoist and much of the associated rescue equipment was accomplished during the war.

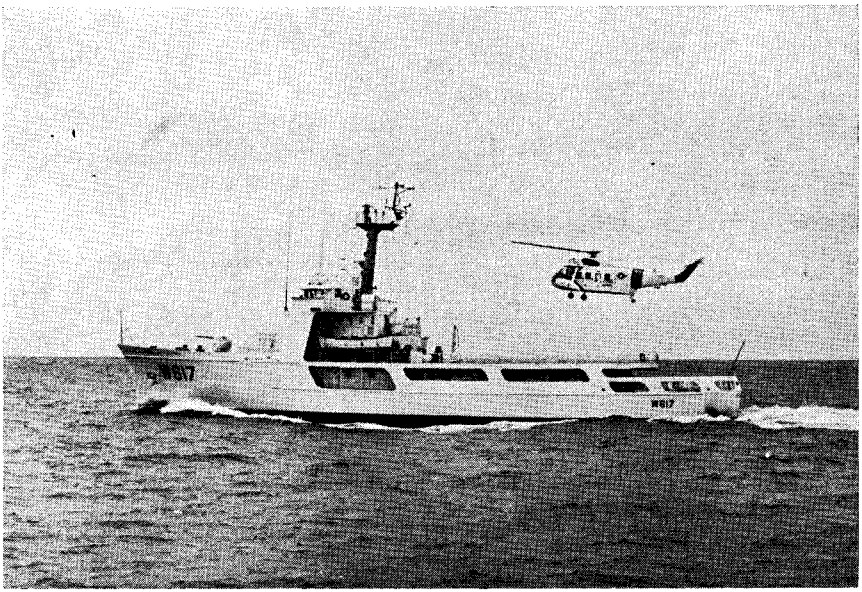
Captain Kossler died before the helicopter had been fully accepted by the Coast Guard, but his accomplishments are remembered by the American Helicopter Society with the "CAPTAIN WILLIAM J. KOSSLER AWARD." It is bestowed annually on the individual who is most deserving of recognition "for greatest achievement in practical application or operation of rotary wing aircraft, the value of which has been demonstrated in actual service during the preceding year."

There were many aviators who still insisted that the Coast Guard's future in aviation required the operation of seaplanes from the open seas. Yet with regard to rough water operations the manufacturer of the PBM seaplanes was only required to make at least 12 take-offs and landings in at least 2½ foot waves. According to the U. S. Navy Hydrographic Office "Scale of Sea Conditions," a slight sea is one from 1 to 3 feet in height. Thus these aircraft were not designed to withstand anything more than a slight sea. However, Headquarters was urged to authorize open sea landing and take-off tests to develop techniques that would make it possible to operate from the open seas. A PBM seaplane, which was instrumented to measure structural loads, was assigned to this project.

The problem was approached by studying open sea conditions, which depend on the directions of travel of seas and swells, their periods, heights, and phase relationships. Depending on these mutual relationships, the wave trains can interfere in a pattern of short-crestedness, reinforce each other to produce waves of great height, or cancel each other to produce an almost flat sea. Instead of attempting to take off and land into the wind, the practice of taking off and landing parallel to the crest of the

swells was evolved. The use of reversible props to shorten the landing run and JATOs to shorten the take-off run were developed. Some unexpected problems were encountered. For example, during the rough water taxi tests, it was found that in making a down wind turn by reversing one propeller and going ahead on the other, the down wind prop would bury itself in green water when the aircraft was cross wind thereby damaging the prop. If that happened on an actual mission, the purpose of the mission would be defeated and the would-be rescuers would have to be rescued.

This program ended when the test plane crashed when landing 5 miles off shore. Just before the aircraft was ready to make contact, the right wing tip float struck the water throwing the plane into a violent right turn that tore the right wing off. Then the left wing tip float struck the water throwing the plane into a violent lefet turn that ripped off the left wing. The crew barely had time to escape from the hull before it rolled over on its back. It sank when efforts were made to tow it with a crash boat. These tests confirmed the fact that seaplanes cannot operate with sureness and security in even moderate seas. Long range, rela-



An HH-52A Amphibious Helicopter coming in for a landing on VIGILANT, one of the new Medium Endurance Cutters.

tively fast, airplanes are still needed for intercept and escort duty and for searching large areas, but these missions can be handled just as well or better with the Grumman Albatross.

The cutter-helicopter team has finally come into its own, now that landing decks are being built on the new cutters. The man, who sparked this development is Captain John M. Waters, Chief of the Search and Rescue Division at Headquarters. His article "Little Ships with Long Arms" in the August, 1965 issue of the Naval Institute Proceedings relates the progress that has been made in this field. Now for the first time, the helicopter is more than the eyes of the ship, it is a strong right arm as well. There will be some limitations in operating helicopters from small ships in rough seas, but these are things that can be solved. It may require stabilizing the ship by means of movable hydrofoils or by stabilizing the landing deck itself by means of servos that are controlled by gyros. Captain Waters has also published a book entitled "Rescue at Sea" that not only covers aviation, but the work of the Coast Guard Weather ships as well and the manner in which the efforts of all Coast Guard rescue activities are coordinated. It is an excellent history of modern C. G. Aviation.

I have only talked about people from Stone to Waters who

have initiated various phases of Coast Guard Aviation. But it took the dedicated efforts of a great many officers and enlisted men to build this fine team, which is exemplified here by this Coast Guard Air Station at Ellington Air Force Base.

(Editor's Note)—

Such a brief accounting of Coast Guard aviation and its pioneers naturally cannot give an account of all those who contributed substantially to the development of this arm of the Coast Guard. Further, the history does not do full justice to Captain Erickson himself.

A man of great vision, Captain Erickson was a strong proponent of Coast Guard use of the helicopter almost from its inception. He established the first U. S. helicopter training school and made the first known rescue by helicopter. He trained Coast Guard and Navy pilots for tests scheduled by a Joint British-U. S. Board for the Evaluation of Helicopters for Anti-Sub. Warfare. He took part in Anti-Sub. tests aboard British M. V. DAGESTON, and participated in the first dunking sonar tests with a helicopter. His developmental work in equipment, such as the rescue hoist and rescue basket brought him wide acclaim. He received decorations from two foreign governments. Some of his accomplishments are recounted in *Rescue at Sea* by Captain John M. Waters, Jr.

WASHINGTON ISLAND REVISITED

By CAPT Paul R. Peak '44
Headquarters

In January, 1965 the WINNEBAGO evacuated the 61 survivors of the M/V SOUTHBANK from Washington Island, 1006 miles south of Honolulu. LTJG Bill Caster related this sea story in the July-August, 1965, Alumni Bulletin. In July, 1966 the WINNEBAGO revisited the scene of the shipwreck. This is my postscript to Bill Caster's tale.

The occasion for WINNEBAGO's second trip was a reserve training cruise which went south to three of the Line Islands. As in January, 1965, the WINNEBAGO hove to off both Washington and Fanning Islands, and the plantation managers came aboard. They found our milk and fresh produce (from temperate climates) refreshing; we found their turn of phrase and point of view (colonial U. K.) equally so.

Our first visitor was Mr. P. F. D. Palmer, Manager of Fanning Island Plantations, Ltd. Phil boarded in whites from the plantation motor launch—white shoes, knee socks, walking shorts, shirt, and wide-brimmed palm hat. He seemed the very epitome of the colonial Briton who has disappeared in less isolated parts