

50th ANNIVERSARY OF NAVAL AVIATION

PATROL PLANES and PATROL SQUADRONS



A NARRATIVE ENUMERATION, to WWII

by FRED C. DICKEY, JR.

PHOTO CREDITS on Page 217

At left, possibly the longest-lived flying boat type ever produced, the PBV-1. Developed for the Navy in 1933-35, some of these are still flying, one in particular on fire-fighting duties.

On November 30th, 1912 the Curtiss Aeroplane & Motor Company delivered to the Navy its first flying boat. This aircraft was known as the C-1. Late in the afternoon of that day, Naval Aviator Number 1, Lt. Theodore G. Ellyson (1) climbed into the cockpit for the first test hop but because it was late in the day, only a short flight was made. In comparison with the flying boats of later years this was a rather crude affair, but it flew, and the trial was a start toward the development of a far-flung patrol operation, destined to expand into a great effort involving many men.

No sooner was the flying boat completed and flying, than the men who were responsible for its design started to think of flying the Atlantic Ocean. In 1914 Curtiss designed, with the encouragement of the Navy, a twin-engined flying boat with a wing span of seventy-two feet, a weight of 5,500 pounds, and powered by two Curtiss OXX engines. But with the start of World War I, the plan was dropped by the U.S. Navy. The plane was purchased by the British Government and additional orders were placed with Curtiss for more of the same type. From this basic design Curtiss developed to British requirements the H-4, H-8, H-12. At the same time the British were building in their own factories, the "Felixstowe" flying boats known as F-2a's and F-5's. Curtiss improved on the H-12 design, which became the H-16, of which seventy-five were delivered to England and seventy-four to the U.S. Navy. (Photo No. 1) The Naval Aircraft Factory also built a total of one-hundred and fifty of these H-16's. The Naval Aircraft Factory improved upon the F-5 flying boat, and the version became known as the F-5-L (Photo No. 2). The war ended before very many of these planes were built, and it became the standard patrol airplane used by the Navy until 1929. Two hundred and twenty-seven F-5-L's were built.

In 1917, as the United States entered World War I, the Navy did not yet have a standard flying boat. Curtiss was then building the HS-1 for private use. The Navy took this design and with the newly developed "Liberty" engine, it then became the HS-1L. (Photo No. 3) With an extra bay in each wing, the HS-1L became the

HS-2L (Photo No. 4). Before the war was over there were over one thousand HS-2L's built. The majority of these planes were used in the United States, and it wasn't until the late 1920s that the last one was retired.

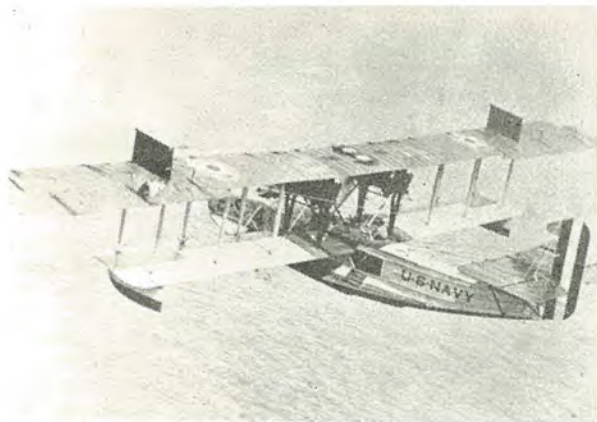
During the course of the war the Navy Department came to feel that a flying boat could be built and flown across the Atlantic Ocean. If this could be done, it would eliminate having to deliver airplanes by surface vessels to Europe. Glenn Curtiss designed, with L.Cdr. H.C. Richardson, the NC flying boats. The war ended before this project was completed but the flight of the "NC boats", NC-1, NC-2, NC-3, and NC-4 was carried out. (Photo No. 5) The NC-4 was the only one to complete this flight. Richardson was a pilot of the NC-3 (2).

Although the U.S. Navy used many flying boats for patrol duties during the War, there were no flying boat squadrons formed. The aircraft were assigned to various Naval Air Stations and flew patrols from these bases. In January, 1919 the Navy Department decided to

Below, the HS-1L



PATROL PLANES - U.S.N.



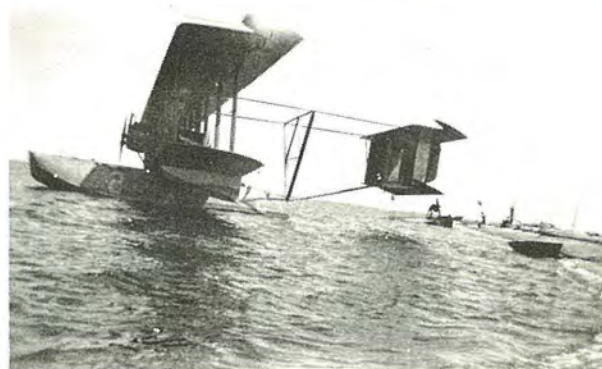
1. H-16



2. F-5-L



4. HS-2L



5. The NC-2



6. NC-9



7. PN-7



8. PN-9



9. PB-1

form a flying boat squadron which would operate with the Fleet. The H-16 was selected for use by this squadron, and twelve pilots and six H-16's were assigned all under the command of L.Cdr. Leighton.

On the 13th of February, 1919 all planes and crews departed from Miami for Guantanamo, Cuba where the Fleet was operating at the time. On the way one airplane developed engine trouble and was forced to land. In the storm and heavy seas this plane was lost but the other five made the flight with no other trouble. Upon arrival at Guantanamo L.Cdr. Leighton reported to Captain G.W. Steel, Jr., who became the first commander of Air Squadrons, U.S. Atlantic Fleet, his flagship being the U.S.S. SHAWMUT.

While the Squadron was in Cuban waters many search flights were carried out with the Fleet. For the first time airplanes were used by battleships to spot the fall of their shells, although most of the battleship commanders were skeptical of the reliability of the aircraft spots and would not use them. The UTAH and the FLORIDA both had captains who felt perhaps these young pilots had something that might be of help to them. Both used the airplanes for spotting and the UTAH thus won the fleet gunnery trophy for the year 1919.

In April all airplanes were returned to the United States landing at the Naval Air Station, Key West, Fla. The pilots went on to the Naval Aircraft Factory at Philadelphia to pick up six new F-5-L's. From here they returned to NAS Hampton Roads, Va., where Captain Steel was now located.

With the return of the squadron to Hampton Roads, it was decided to assign another tender, the U.S.S. SANDPIPER which had been a mine sweeper during the War. It is interesting to note that this ship went on to be used as a seaplane tender in World War II.

In September, 1919 the Squadron returned again to the Naval Aircraft Factory to turn in their aircraft and receive new F-5-L's. By the 12th of November, 1919 all the new aircraft were in commission and the squadron proceeded New York and to Pensacola. When the Fleet departed from their East Coast ports for the winter problem at Guantanamo the flying boat squadron went along. It now had two tenders to work from, and it was possible to establish widely separated bases.

During the summer of 1920 two of the new NC flying boats, constructed in late 1919 and early 1920 at the Naval Aircraft Factory, were assigned to the squadron. These NC boats only had three engines, thereby differing from the original NC-1/-4. The squadron was now comprised of six F-5-L's and two NC's (Photo No. 6) A tender was assigned, the U.S.S. HARDING, a converted destroyer.

In November the squadron once again returned to the Naval Aircraft Factory to turn in their planes and receive new F-5-L's. It was decided not to take the NC flying boats to Cuba for winter fleet maneuvers; the three-engine installation had proven unsatisfactory and it was decided to convert them to four-engine types. At this time the squadron received a new commanding officer, LtCdr. Harry Cecil, who replaced L.Cdr. Leighton.

The squadron departed from Hampton Roads on the 16th of December. After several forced landings the entire squadron, now nine F-5-L's, arrived at Jacksonville where they stayed until after Christmas. On the 27th the airplanes took off for Key West, where seven of them landed on the 30th. Two replacements were obtained from Pensacola, but upon arrival at Key West one of them was in such poor shape that it was necessary to hoist it aboard the SANDPIPER for transportation to Guantanamo.

Before the squadron left Key West two of the recently converted NC flying boats, now four-engine types, were able to join the squadron, and accompanied it to Guantanamo without trouble. After several days in Cuba the squadron was ordered to Panama. On the flight to Coco Solo one of the NC boats was lost, being forced to land in a small cove at Serrana Bank due to engine fail-

ure. NC-10 circled the downed plane calling for assistance by wireless. The SANDPIPER arrived and hoisted the plane on board but due to heavy seas then running the lashings broke loose and the plane was lost overboard, sinking almost immediately. The rest of the squadron arrived at Coco Solo on the 19th of January, 1921.

When the East Coast squadron arrived at NAS Coco Solo they joined forces with a newly formed squadron from the West Coast. This squadron, under the command of Captain Mustin, left San Diego on the 7th of January, 1921 with twelve F-5-L's and two NC boats under Commander Towers, the NC-5 and NC-6. These two airplanes had been shipped to NAS North Island and erected there for the flight to Coco Solo. Both of them were lost on the flight south; NC-5 was damaged on landing in the open sea and was sunk by gunfire from a destroyer, NC-6 developed engine trouble and was landed, but when it was beached the hull and wings were damaged and it also sank. Thus, of the four NC boats that took part in the flight south, three were lost. Towers felt that if both of his aircraft had had four engines they might have been able to make the flight successfully.

Both squadrons remained at Coco Solo for a month. The airplanes were overhauled, engines were changed and plans were made for the return flights, the West Coast Squadron returning to North Island, the East Coast Squadron to Cuba. Upon arrival at Guantanamo the East Coast Squadron began operations with the Fleet. In March (1921) the F-5-L's and the remaining NC boat began artillery spotting for the battleships and, as the aircraft spots were found to be very accurate and their radio transmissions good, the Squadron spent the better part of the month employed in this work. Several force landings occurred due to engine failures, but no planes were lost and no personnel suffered serious injury.

On the 1st of April, 1921 the squadron began the return trip to the United States, reaching Miami on the 9th and at Hampton Roads in the afternoon of the 13th. The squadron flew on to the Naval Aircraft Factory two days later and with this arrival at Philadelphia, the most successful cruise to date came to an end. During its four-month cruise the Squadron covered 8,000 miles, each plane averaging 125 hours flying time. At the Naval Aircraft Factory the aircraft were turned in and twelve new F-5-L's plus the NC-8 and NC-9, both having four engines, were delivered to the Squadron.

Meanwhile on the west coast Seaplane Squadron One was not to be outdone by the East Coast Squadron. On the 22nd of June, 1921, twelve F-5-L's departed from North Island for San Francisco, arriving there on the 1st of July. One plane was forced to land in the open sea due to engine failure and was lost, however the crew was saved. On the 6th of July the remaining eleven planes took off for the return journey to North Island. The flight was made non-stop in seven hours.

July found the East Coast Squadron engaged in the "bombing experiments" off of the Virginia Capes. The ships that were being used were those that had been surrendered by the German Navy at the end of the war. These included battleships, submarines and destroyers. On the 21st of June the submarine U-117 was sunk by three F-5-L's. A few days later, on the 13th of July, Army Air Service airplanes sank a destroyer. The cruiser FRANKFURT was sunk on the 19th of July by both Army and Navy aircraft, the Air Service using twelve Martin Bombers, the Navy nine F-5-L's and five Martin Bombers.

With reference to the sinking of the German battleship OSTFRIESLAND, over the years there has been considerable controversy as to just what happened. Some say that General Mitchell disregarded the agreement that had been reached as to the bombing of this ship. One thing certain is that the ship was sunk by bombs; however when the Navy asked Gen. Mitchell by radio to "Cease firing" so that an inspection party could go aboard the ship to check the damage, Mitchell refused to stop the bombing. His bombers went on to drop five

1,000 pounders, later followed by seven 2,000 pound bombs. As a result the OSTFRIESLAND sank and the Navy inspectors were unable to inspect the ship.

In late October, 1921 all of the F-5-L's of the East Coast Squadron were turned into the Naval Aircraft factory for overhaul. The NC-9 had been damaged in September and was returned for overhaul at the same time, followed by the NC-10. On the 10th of December the Squadron began the return flight to Hampton Roads, the F-5-L's all arriving by the 12th, the NC-10 on the 13th. The NC-8, which had been in storage had been erected and was assigned to the Squadron.

The Squadron went again to Cuba in March with six F-5-L's and the NC-8 and NC-10. The NC-8 only got as far as Cape Henry and was forced to land. Due to damage received it was returned to Hampton Roads. They remained in Cuban waters until the middle of April, at which time they began the return flight to Hampton Roads. At Key West while attempting to take off the NC-10 sucked its bottom out and became a complete wreck. This was the end of the NC flying boats operating with the squadron.

On June 17th, 1922 the East Coast flying boat Squadron became known as Scouting Plane Squadron No. 1. As far as flying boat squadrons on the west coast, it appears that there were no flying boat squadrons on the west coast at this time. There were some F-5-L's but they were operating under separate assignments.

When VS-1 headed for Cuban waters in January of 1923, they were not alone. During the year Torpedo and Bombing Squadron One had been formed, flying PT's, and when VT-1 departed for Cuban waters with VS-1 it had 16 PT-2's and 2 PT-1's. VS-1 proceeded on to Coco Solo, arriving there on the 16th of February and stayed there until the 31st of March, at which time it was ordered back to Hampton Roads, arriving there on the 27th of April.

One of the biggest problems facing the Navy was that of a new type of patrol plane to replace the F-5-L's, the leftovers from the War. These aircraft were wearing out and needed replacements. In 1923 the Naval Aircraft started construction on two new flying boats, a PN-7 type (Photo No. 7). The hull was a modified F-5-L and the wing had only 72'10" span with but one set of inter-plane struts. The two engines were Wright T-2 in-line's, of 525 HP each mounted in a streamlined nacelles. VS-1 departed again from Hampton Roads in January of 1924 to take part in the fleet problem near Cuba with twelve F-5-L's, two H-16's and a single PN-7.

The fleet problem for 1925 was to be held in Hawaii. It was determined that the East Coast squadrons would take part in this operation. Accordingly, all VS-1 and VT-1 aircraft were disassembled and shipped to Pearl Harbor aboard the U.S.S. WRIGHT and the JASON. Upon arrival at Pearl Harbor the planes were all reassembled and made ready to take part in the maneuvers after which they were returned to Hampton Roads. It was the last cruise in which the F-5-L's were used; on arrival at Hampton Roads they were turned in for the last time, and for all practical purposes there was no flying boat squadron, nor would there be until 1929.

Even though there were no longer any flying boat squadrons the Naval Aircraft Factory continued to design flying boats. The PN-7 was followed by the PN-8 which was an improved PN-7 and there was but one PN-8 built. Then came the PN-9, of which there were two built (Photo No. 8). These were twin engined flying boats having Packard 1A-1500, 480 HP engines. They were built with the idea in mind to fly them from San Francisco to Pearl Harbor. At this same time the Boeing Airplane Co. was building the PB-1 also intended to be used in the proposed flight. All three were to be under the command of Cdr. John Rodgers, Naval Aviator #2. All had metal hulls. The PB-1 was equipped with twin Packard 2A-2540, 800 HP engines in a tandem or push-pull arrangement (Photo No. 9).

At 3:00 PM on the 31st of August, 1925, Cdr. Rodgers took off from San Francisco Bay, in PN-9 (No. 1) followed by PN-9 (No. 3) flown by Lt. A. P. Snody. The PB-1 (No. 2) experienced so much trouble with its engines that it was decided not to use this aircraft on the flight. After covering about 300 miles, PN-9 (No. 3) also developed engine trouble and was forced to land at sea. She was taken in tow at about 2:00 AM in the morning on the 1st of September by the U.S.S. WILLIAM JONES and towed back to San Francisco. After No. 3 had landed, No. 1 circled to make sure that they were all right and then headed into the setting sun toward Pearl Harbor. For a while everything went along fine, but after several hours the tail wind that had been expected died down. The fuel consumption was running six gallons an hour more than had been figured on. Cdr. Rodgers had also made the mistake of not passing directly over the station ships, instead he had kept close enough to the prescribed track to sight them. He therefore did not get true radio bearings, and since he was starting to develop engine trouble he decided to land near the U.S.S. AROOSTOOK, repair the engine and refuel.

Using the navigation figures he had, he began to look for the AROOSTOOK which, of course, was not where he thought it was, due to his faulty navigation. At about four o'clock on the afternoon of the 1st of September his fuel gave out and he was forced to make an open sea landing. Once on the water Rodgers decided to sail his flying boat into Pearl Harbor. Fabric was removed from the lower wings and a crude sail was erected. There was food and water on board to last for three days, but water was collected from showers and the food was rationed out. After ten days of being under "sail" PN-9 No. 1 was sighted by the submarine R-4 just ten miles off Kauai Island. As a "sail boat" the PN-9 had sailed 450 miles.

After the PN-9's, the Naval Aircraft Factory built two PN-10's. There were now several "odd ball" flying boats in the Navy. In February, 1926, Cdr. Rogers recommended that the two PN-7's, the two PN-9's and the one PB-1 be combined to form an experimental scouting squadron, to be known as VS-2B, based at North Island. It is not certain how many of these planes went to VS-2, however at least one of the PN-10's was used by it, as proven by photographs with the squadron number on it. Admiral Moffett's log books show that on the 2nd and again on the 4th of September, 1926 he flew in the PB-1 from North Island to San Pedro. The PB-1 was assigned to VJ-1 at this time.

The Navy had been using water-cooled engines on patrol planes since the end of the war. In 1928 it was decided to try air-cooled radials, as a result of this the PB-1 was rebuilt as the XPB-2 with two Pratt & Whitney engines. The Factory began construction on the XPN-11 and PN-12 (a rebuilt PN-10) which were also equipped with air-cooled engines. The PN-12 (Photo No. 10) proved so satisfactory that it was decided to have private companies build them based on this design. Accordingly, there were twenty-five PD-1's ordered from Douglas Aircraft Co., and thirty-five from Martin Co. as the PM-1. Naval Aircraft Factory also built the XP4N-1, similar to the PN-12, but with twin rudders. The Martin Co. received the order for twenty-five PM-2's and Keystone received the contract for eighteen PK-1's.

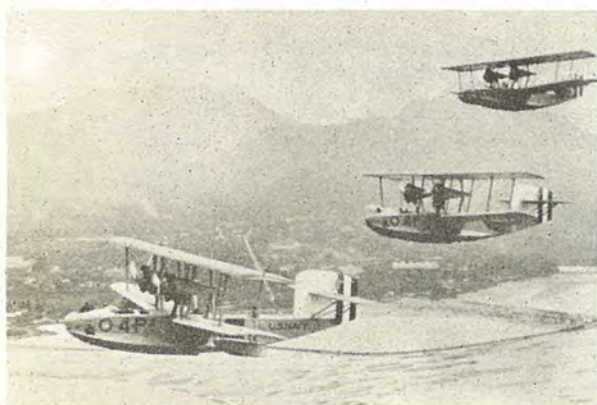
With all of these patrol planes on order the Navy was faced with having to form quite a few new patrol plane squadrons. The 1st squadron to carry the VP designation appears to have been VP-1, however there was a VP-14 formed at Pearl Harbor about 1924, which became VP-1-D-14 in 1927. This squadron received T2D-1's which was used with both wheels (Photo No. 11) and twin floats. There were twelve of the T2D-1's built, but it is not known how many of these planes were operated by VP-1. Although designed to be used aboard an aircraft carrier this was unsuccessful. It was first assigned to VT-2 in May of 1927.



10. PN-12



11. T2D-1



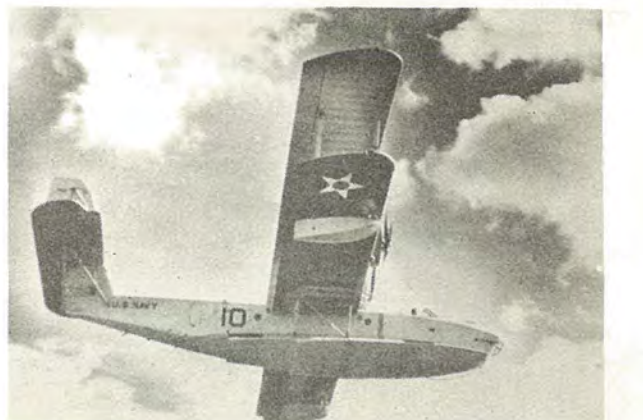
12. PD-1



13. PM-1



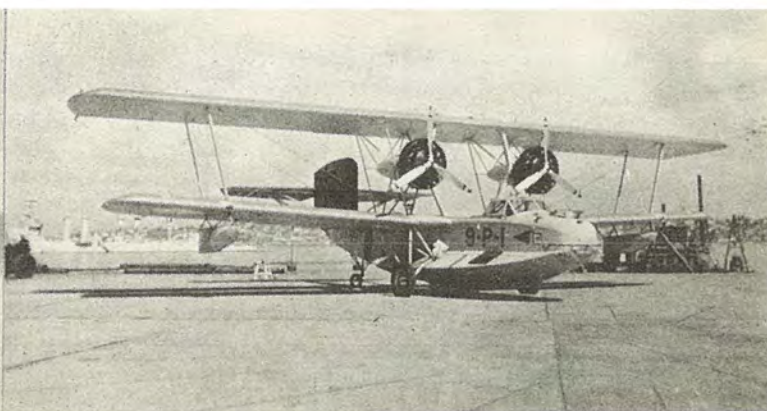
14. F3M-2



15. PM-2



16. PK-1



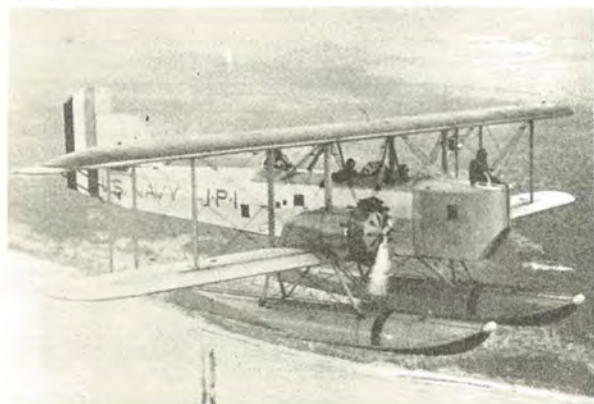
17. PM-1



18. PH-1



19. P2D-1



19A. T2D-1



20. P2Y-1



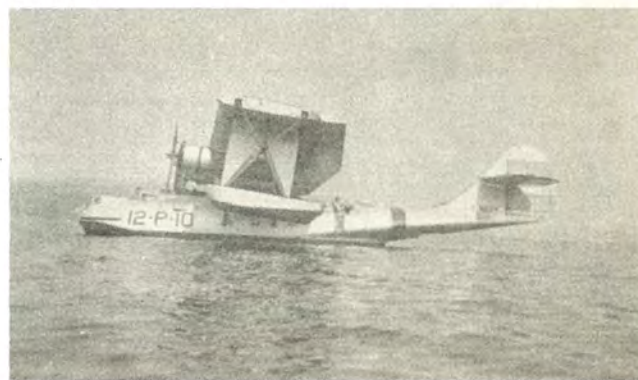
21. P2Y-1



22. P2Y-3



23. PBX-1



24. PBX-1

On the 6th of June, 1929 the first of the new patrol planes (a Douglas PD-1) was delivered to VP-7 (Photo No. 12). VP-7 received a total of six PD-1's after which VP-4 and VP-6 received theirs. VP-6 had been using T4M's. At the same time, squadrons on the East Coast were being formed. The first was VP-8, commissioned on the 1st of July, 1929, and assigned six T4M-1's. The aircraft and the men came from VT-9. VP-8 continued to operate with T4M's until August of 1930 at which time they received PM-1's (Photo No. 13). VP-10 was formed in July, 1930 made up of what had been VT-9 at the time VT-9 was decommissioned. In September and October, 1930 VP-10 turned in its T4M's and also received the new PM-1's.

VP-8 and VP-10, both flying PM-1's, flew from Hampton Roads to Guantanamo for the fleet maneuvers of 1931. While based at Guantanamo the U.S.S. WRIGHT was used as a tender. Upon completion of the fleet problem at Guantanamo both squadrons flew on to Coco Solo to operate with VP-2 (also using PM-1's) formed in late 1930. With VP-2 at Coco Solo was VT-3, later in the year to become VP-3. At this time they were flying T3M's on twin floats. In April of 1931 VP-8 and VP-10 returned to Hampton Roads.

While Martin, Douglas, Keystone and Hall were building patrol planes for the Navy, it was realized that a patrol plane of greater range was required. The Bureau of Aeronautics designed a monoplane with a wing span of 100 feet. The contract for this patrol plane, one model to be built, was given to the Consolidated Aircraft Company. The XPY-1 was delivered to the Navy in early 1929 for tests. This was a twin-engined monoplane with the engines mounted between the wing and fuselage and, instead of wing tip floats, it had two small pontoons, one on each side of the hull. Following flight tests the Navy contracted for nine of this type with The Martin Co. which had underbid Consolidated. Three of them were P3M-1's and six were P3M-2's (Photo No. 14).

When VP-10 returned to Hampton Roads they turned in their PM-1's and received the six P3M-2's. After a short term these were replaced by the PM-2 type, an improved PM-1 with twin rudders and an enclosed cockpit (Photo No. 15). After overhaul at the Naval Aircraft Factory, the P3M-2's went to Annapolis. At Pearl Harbor, VP-1 had replaced their T2D-1's with the PK-1 type (Photo No. 16); VP-4 had twelve PD-1's and VP-6 had six PD-1's and six PM-1's. On the West Coast, both VP-7 and VP-9 were now using PM-1's (Photo No. 17).

On the East Coast VP-8 began, in July 1932, to exchange PM-1's for the PH-1 type (Photo No. 18). VP-3, at Coco Solo, was using the P2D-1 type and thus became the last twin-float squadron in the Navy (Photo No. 19).

After Consolidated lost out to Martin on the P3M's they took the basic design and improved on it, resulting in the XP2Y-1, which was turned over to the Navy for tests in early 1932. The main difference between this and the P3M was the small lower wing. Consolidated received a contract from the Navy for twenty-three P2Y-1's. The first squadron to receive these was VP-10 (Photo No. 20). VP-5 also turned in PM-2's later on for P2Y-1's.

A new command was formed in the Navy, known as Aircraft Base Force which brought all patrol plane squadrons under one command, including:

San Diego:

VP-7 (6 PM-1's)
VP-9 (6 PM-1's)
VP-2 (9 PM-2's)
VP-5 (9 PM-2's)

Coco Solo:

VP-3 (12 P2D-1's)
VP-8 (6 PH-1's)
VP-10 (6 P2Y-1's)

Pearl Harbor:

VP-1 (12 PK-1's)
VP-4 (12 PD-1's)
VP-6 (6 PM-1's and 6 PD-1's)

VP-2 and VP-5 departed San Diego for Coco Solo

shortly afterward. They arrived at Coco Solo on the 22nd of April, and VP-8 was transferred to Pearl Harbor at the same time. Their airplanes were loaded on board the WRIGHT for shipment, arriving at Pearl Harbor on the 4th of June, 1933.

VP-5 went to Norfolk for new P2Y-1's and on the 7th of September, 1933, six P2Y-1's, under the command of LCDr. D. Carpenter departed from Hampton Roads on the return journey to Coco Solo. One was forced to land at Miami, but the other five made it all the way to Coco Solo, the longest non-stop flight to date by a Navy operating unit.

In the Pacific area thirty patrol planes from the Pearl Harbor squadrons departed on their first advanced base operations. These aircraft, under the command of Commander E. W. Tod, flew from Pearl Harbor to French Frigate Shoals and were based there aboard the tenders PELICAN and LARK. With four PD-1's from VP-1, Commander Tod went on to Johnson Island, on an exploratory flight, returning to French Frigate Shoals. On the 29th of April all thirty air planes returned to Pearl Harbor.

After its nonstop flight from Hampton Roads to Coco Solo, and with a decision to transfer VP-10 to Pearl Harbor, VP-5 turned over to VP-10 six of their new P2Y-1's in exchange for six of the older P2Y-1's that VP-10 had been using for sometime. The newer P2Y-1's had greater range. It was proposed to fly VP-10 all the way to Pearl Harbor, via Acapulco, San Diego and San Francisco. The tender, WRIGHT, had gone ahead to Acapulco to service the aircraft. After a flight of fourteen hours all six P2Y-1's arrived at the WRIGHT. On the afternoon of the next day, the 8th of October, they began to take off for San Diego. However, due to lack of wind and heavy swell, No. 10-P-6 was unable to get off. It was hoisted aboard the WRIGHT and taken on to San Diego. The other arrived in San Diego on the 9th of October after a flight of nineteen hours.

VP-10 resumed its journey in January 1934, all six P2Y-1's departing from San Diego for San Francisco. They were topped off with gas and, since the weather forecast for the 10th of January looked good it was decided to attempt the flight to Pearl Harbor. The crews had a good rest and at about eleven o'clock on the morning of the 10th they began to turn up and leave their moorings for the take off. The first plane left the water at 12:05; the last plane took off nearly two hours later. The Squadron formed up and passed over the Golden Gate at 1425 hours on course for Pearl Harbor.

For the first six hundred miles all went well. Then the squadron ran into fog. At this time 10-P-5, flown by Lt. John Perry, became separated from the rest of the squadron but rejoined a few minutes later. They continued in and out of fog all through the night, but managed to stay in formation.

At 0830 in the morning VP-10 passed over the WRIGHT. Needless to say, after a night of constant flying on instruments, in formation, this was a most welcome sight. Three planes from VP-8 had flown out to escort the squadron into Pearl Harbor and at 1450 hours the Squadron passed over Pearl Harbor with 10-P-1 in the lead (Photo No. 21).

Two San Diego patrol squadrons, VP-7 and VP-9, both flying PM-1's departed for Coco Solo in April, joining VP-2, VP-3 and VP-5 for the Spring fleet maneuvers off Guantanamo Bay. On the return flight one airplane, 9-P-3 was forced down and in the following 19 hours it received such damage to the lower wings that it was necessary to hoist aboard the WRIGHT for extensive repairs. 2-P-9 was also forced down, but it was repaired and was able to complete the return flight. VP-7 and VP-9 returned to San Diego late in May.

Earlier in the year it was proposed to send the two San Diego squadrons to Alaska on an advance base operation and upon their return from Coco Solo preparations were begun. On the morning of 17 July 1934 VP-7 and VP-9 took off from San Diego in their PM-1's. That is,

all except 7-P-1, which developed engine trouble. San Francisco was the planned stop for the 1st night, but upon running into fog, the Squadrons landed at Port San Luis and Santa Barbara. The next day the eleven PM-1's arrived at San Francisco and, later in the afternoon, were joined by 7-P-1 which had been repaired. They proceeded to Seattle for five days and on the morning of the 26th departed Seattle for Ketchikan. Again they ran into fog and were forced to land fifty miles short of Ketchikan. The next day, under a two-hundred-foot ceiling, they flew on to Ketchikan.

The squadrons arrived at Kodiak on the 14th of August; it had been planned to go to Dutch Harbor but, because of several days of bad weather and in order to carry out the schedule, it was necessary to cancel out this part of the flight. On the 15th of August VP-9 began the return flight to San Diego, followed the next day by VP-7. After many stops along the way with much bad weather both squadrons arrived back in San Diego on the 4th of September. This was the first time that squadrons had operated in the Alaskan area. Many things had been learned, the most important being that the pilots needed much more actual instrument flying experience. Installation of automatic pilots and better navigation gear were also recommended.

In August of 1933 Consolidated came out with the XP2Y-2, a modified P2Y-1 with the engines moved into the leading edge of the wing. In December Consolidated received an order from the Navy for twenty-three P2Y-3's (Photo No. 22). At the same time Consolidated developed a modification kit so that the Navy could convert the P2Y-1's that VP-5 and VP-10 were using into P2Y-2's. The basic difference between the P2Y-2 and the P2Y-3 was an increase of 420 gallons in the amount of fuel that the P2Y-3 could carry. Up to 1934 the P2Y-3 was by far the best patrol plane that had been developed for the Navy.

In January and February of 1935 the WRIGHT and several small tenders, in company with the squadrons at Coco Solo, VP-2, VP-3 and VP-5, made a complete circuit of the Caribbean. The only major casualty during this cruise took place on the night of February 8th when the VP-3 Squadron Commander's airplane, 3-P-1 (P2D-1) developed a leak in one of its floats and turned over at the buoy. The airplane was taken aboard the WRIGHT and returned to Coco Solo for overhaul.

The fleet problem for 1935 was held in Hawaiian waters. In May VP-1, VP-4, VP-6, VP-8 and VP-10 departed Pearl Harbor for Midway, stopping at French Frigate Shoals for fuel. 4-P-2 and 8-P-1 were forced to return because of engine trouble. On 11th of May the squadrons arrived at Midway Island. 1-P-1 was forced to land at sea, but was picked up by one of the tenders and continued on to Midway where the necessary repairs were made. All aircraft were moored inside the lagoon at Midway, and due to the trouble small boats were having in the heavy swells, a shore base was established for the personnel. Tents were set up, a galley, mess hall, and first aid station established. A total of 354 men were moved ashore where they remained for twelve days tending the aircraft of the squadrons.

On the morning of 16th May while on patrol 6-P-5 developed engine trouble and was forced to land at sea. The personnel were picked up by the U.S.S. MONTGOMERY and the airplane was taken in tow but soon afterward the towing line parted and 6-P-5 sank. Six days later VP-6 lost another airplane. During the night of May 22nd two planes, 6-P-7 and 6-P-10, were on patrol. At about eight o'clock 6-P-10 developed engine trouble and was forced to land. The night was very dark, there being no moonlight, but the pilot was able to make a safe landing. 6-P-7 had picked up a radio message from the downed plane and for awhile circled overhead. The crew from 6-P-10 and their airplane were located by the U.S.S. BREESE and returned to base. However, 6-P-7 failed to return to base at its appointed time and failed to

answer radio calls. A search was begun the next morning in the area of last report and soon the wreckage of 6-P-7 was found floating in the water. But none of the crew was ever found. The squadrons returned to Pearl Harbor in late May.

The San Diego squadrons, VP-7 and VP-9, departed from North Island in April for their second Alaskan cruise. Both squadrons were still flying PM-1's, each having six aircraft. They proceeded via San Point to Sitka in excellent weather and without trouble. On the flight to Dutch Harbor from Kodiak the squadrons ran into very poor weather. VP-9 ran into snow and ice and was forced down to one hundred feet above the water. The squadron commander decided to return the squadron to Kodiak. VP-7 had flown more to the south and only ran into a small amount of snow and no ice. VP-9 joined them later and were tended by the WRIGHT.

On their return journey, the flight from Astoria to San Diego was made, non-stop, in nine and a half hours, the longest non-stop flight to be made by planes of the FM type.

As the new P2Y-3's were delivered to the patrol squadrons the old PD-1's were sent to Pensacola for use in training patrol plane pilots augmenting their three PM-1's.

In October, 1933, Consolidated Aircraft Corp. was given a contract for one experimental patrol plane known as the XP3Y-1. This design was a twin-engined, all metal monoplane with the wing supported on the hull by a pedestal in which the flight engineer rode, and by two struts on each side. The wing tip floats retracted up and out to form the wing tips. The prototype was delivered to the Navy in the spring of 1935. At the same time Douglas delivered to the Navy their XP3D-1. Consolidated won the contract because of price and received an order for sixty P3Y-1's, later redesignated the PBY-1 (Photos No. 23 & 24).

In October 1935 the XP3Y-1 took off from Coco Solo and flew to San Francisco non-stop. This author was an observer at the takeoff the time Father was in command of VP-3 at Coco Solo. It was planned to fly to Seattle, but because of the design of the rudder it was impossible for the airplane to get off the water with a full load of fuel. When the pilot tried to get on the step, the empennage would sink into the water and act as a water rudder. As a result, the pilot would lose control temporarily until he shut down the power. When the pilot, Lt. McGinnis, brought the XP3Y-1 back to the ramp I was standing with my Father when he asked what was wrong and this was his answer. The rudder was later redesigned and the problem eliminated.

The patrol plane squadrons, in 1936, received a commander that believed that airplanes were built to be flown and not to sit around. This was Admiral Ernest J. King. He no sooner took command than he took the San Diego patrol plane squadrons, VP-7 and VP-9 on another trip to Alaska, together with the new Seattle squadron, VP-12.

While Adm. King was making plans for the Alaska operation he decided that a base would be established at Sitka. When the WRIGHT arrived at Sitka, he took over the old Navy coaling station and, with the building materials brought along by the WRIGHT, a ramp was constructed so that the aircraft could be drawn up out of the water for maintenance. During this cruise the squadrons ran into quite a bit of bad weather, but they flew many hours and their pilots became very good at instrument flying. The P2Y's flew extended patrols, while the PM's flew as long as they could. All squadrons returned to the States after being gone for two months.

Following the Alaska cruise Adm. King moved on to Pearl Harbor with plans for a Pacific cruise. At this time there were five patrol plane squadrons assigned to Pearl Harbor. VP-6 was at San Diego getting new PBY's

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Patrol Planes and Patrol Squadrons

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but VP-1 (PK's), VP-4 (P2Y-3's), VP-8 (PH's) and VP-10 (P2Y-2's) were at Pearl Harbor when he arrived. Thirty-three planes from the latter squadrons departed from Pearl Harbor for French Frigate Shoals, with Adm. King flying as co-pilot in one of the airplanes of VP-10 (10-P-1). All arrived safely. During the first night at the advance base a strong wind came up, one plane broke lose from its moorings and sank in about thirty feet of water. The Admiral ordered the squadron commander to remain there and raise the plane. The rest of the aircraft went on with the survey of the various islands in the area. After three weeks of operations the squadrons returned to Pearl Harbor. One squadron, still at French Frigate Shoals trying to raise the sunken airplane finally returned three days after the other two squadrons but without the plane that sank.

The first squadron of PBV's, VP-6, flew from San Diego to Pearl Harbor in January 1937. While VP-11 had been formed on the 1st of July, 1936 and received the first production PBV airplanes, VP-6 was the first to fly to Pearl Harbor. VP-11 came later in April. VP-11 operated in the Hawaiian area during the fleet problem of 1937, then turned its PBV's over to VP-8 in exchange for the PH's that VP-8 had been using. The PH-1's were brought to San Francisco on the WRIGHT and flown to San Diego by the pilots of VP-11.

Two new patrol plane squadrons were formed on the West Coast, VP-16 and VP-17, in January 1937, based at Seattle. They were assigned six PM-1's each. Both of these squadrons made one trip to Alaska with their PM-1's, and in the late spring of 1938 they both received as replacements PBV's. VP-14 was commissioned on the East Coast in November 1935 with PM-2's.

In September of 1936 another squadron, VP-15, was formed at Hampton Roads and assigned the six P3M's then in use at Annapolis.

In February of 1937 the WRIGHT once again headed for Coco Solo. The San Diego squadrons, VP-7 (P2Y-3's) and VP-9 (PM-1's) joined the Coco Solo squadrons for the fleet problems in the Caribbean. Adm. King decided that the aircraft then being used by VP-3 (P2D-1's) were not safe for this extended cruise. These airplanes, less the engines and instruments, were towed to the air station dump and a match applied. In all, sixteen P2D-1's were burned. The personnel of VP-3 were sent to San Diego to take delivery of PBV's. The other squadrons, VP-2 (PM-2's), VP-5 (P2Y-2's), VP-7 (P2Y-3's), and VP-9 (PM-1's) flew to the Virgin Islands where they joined the two squadrons from Norfolk, VP-14 (PM-2's) and VP-15 (P3M's). This formed the largest group of patrol planes ever to work together so far. After this cruise was completed VP-2 turned in their PM-2's and the personnel proceeded to San Diego to pick up PBV's. The PM-2's were sent onto Pensacola for training use.

Consolidated Aircraft Corp. delivered to the Navy a four engine patrol plane, the XPB2Y-1, in August, 1938. Later a contract for six of these was awarded to Consolidated and the first production airplane was delivered in December of 1940. All six were assigned to VP-13. In the same period The Glenn L. Martin Co. was building the PBM-1, having received a contract from the Navy in December of 1937. Delivery of PBM-1's began in September of 1940, all going to VP-55 and VP-56.

With the build up of patrol plane squadrons it was

decided, in 1939, to establish Patrol Wings, each comprising several squadrons. These were:

Patrol Wing	Location	Squadrons
1	San Diego	VP-11(7), VP-12(9), VP-13(18)
2	Hawaii	VP-21(1), VP-22(4), VP-23(6), VP-24(8), VP-25(10)
3	Panama	VP-31(2), VP-32(3), VP-33(5)
4	Seattle-Sitka	VP-41(16), VP-42(17), VP-43(19), VP-44(20), VP-45(21)
5	East Coast	VP-51(12), VP-52(14), VP-53(15), VP-54(11), VP-55, VP-56
6	Alameda	VP-61

In almost every case the squadrons were renumbered. (Previous number in parentheses).

Thus as the war clouds began to gather the Navy had twenty-three patrol plane squadrons in commission. By the time the United States entered World War II there were four more squadrons formed, three of these squadrons using PBX-5A's and one using the PBO. At war's end the Navy had twenty squadrons using PBM's, PBV's and PBN's, nine squadrons using PBX-5A's, and thirty-two squadrons using PV's and PB4Y's.

TO BE CONTINUED

FOOTNOTES:

- (1) Lt. T. G. Ellyson, JOURNAL, A.A.H.S., Vol. 6, No. 1 (Spring 1961) p. 14.
- (2) LCDr. H. C. Richardson, Ibid, p. 16.

Grateful acknowledgment for their valuable assistance in compiling data from which this article was written is due to the following: my Father, Rear Admiral F. C. Dickey, U.S.N.(Ret); Rear Admiral H. B. Miller, U.S.N.(Ret); Rear Admiral R. Whitehead, U.S.N.(Ret); Rear Admiral A. W. McKechnie, U.S.N., and Messrs. William T. Larkins, William A. Riley, Paul Matt, George A. Hardie, Harold Andrews, and Lee M. Pearson.

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Also, without the able assistance of the Department of the Navy, Office of Information, I would never have been able to complete this. And there were those early Naval Aviators that I had the privilege of knowing when I was growing up, who would sit and talk to me about flying. A few of them are, Captain A. Crinkley, U.S.N. (Ret), Captain J. G. Howell, U.S.N.(Ret), Rear Admiral T. K. Wright, U.S.N.(Ret), Comdr. E. C. Peterson, U.S.N. (Ret).

PATROL PLANES and PATROL SQUADRONS
PHOTO CREDITS:

Page 161: PBV-1, Gordon S. Williams.
(3) HS-1L, U.S. Navy.

Page 162: (1) H-16, U.S. Navy. (2) F-5-L, U.S. Navy.
(4) HS-2L, U.S.N. (5) The NC-2, F.C. Dickey.
(6) NC-9, U.S.N. (7) PN-7, U.S.N. (8) PN-9, U.S.N.
(9) PB-1, Boeing Airplane Co.

Page 165: (10) PN-12, U.S.N. (11) R2D-1, U.S.N.
(12) PD-1, U.S.N. (13) PM-1, U.S.N. (14) P3M-2, un-
known. (15) PM-2, unknown. (16) PK-1, U.S.N.
(17) PM-1, unknown.

Page 166: (18) PH-1, U.S.N. (19) P2D-1, U.S.N.
(19A) T2D-1, U.S.N. (20) P2Y-1, U.S.N.
(21) P2Y-1, U.S.N. (22) P2Y-3, unknown.
(23) PBV-1, unknown. (24) PBV-1, unknown.