

The Thirties

1930–1939

The Thirties began quietly with an international treaty extending previous agreements to reduce naval armament, but as the years passed they quietly dissipated as the nations of the world moved inexorably toward war.

In the United States, the period began with disturbing indications of a dark economic depression that soon became harsh reality. Forced by this circumstance to effect rigid economies, the expansion of Naval Aviation was slowed, the aircraft inventory was barely sufficient to equip operating units, research and development programs suffered, and operations were curtailed drastically. But as the nation began its program to recover prosperity through the initiation of public works, money was made available for more naval aircraft, for new ships and for modernizing naval air stations. The upward swing began.

In spite of the hardships, there were surprising gains in aviation technology. Engineers and aircraft manufacturers produced more dependable products, aircraft equipment and components were refined and improved, and aircraft performance rose sharply. Better radios of reduced size, more accurate bomb-sights, supercharged power plants, controllable-pitch propellers, efficient retractable landing gear and folding wings; all contributed to the improvement of aircraft performance and made airplanes better instruments of war. Hydraulic arresting gear and catapults were installed aboard aircraft carriers. Better methods of recovering battleship and cruiser observation planes were developed. The feasibility of instrument flight was demonstrated ashore and at sea. Radio controlled planes of dependable performance were put to practical use as targets for AA gunners. Engineers and designers learned more about the value of streamlining and clean design.

In operations, there was a change as whole squadrons began to turn in the record performances previously accomplished by individual pilots. Tactical innovations of the 1920s became fleet doctrine. Three new aircraft carriers joined the fleet, raising the operational total high enough to equip peacetime forces

with a respectable seagoing air arm. Naval Aviation acquired broader respect and, as it achieved prominence in both fleet organization and operations, became a truly integrated arm of naval power.

Only in the field of lighter-than-air were there serious setbacks. Crashes of the *Akron* (ZRS-4) and the *Macon* (ZRS-5) sounded the death knell of the Navy's rigid airship program; and in spite of favorable reports from investigating committees, continued successes in Germany, and repeated recommendations as to its value in specialized operations; the rigid airship was finished. By association, the non-rigid airship almost followed it into oblivion.

As the decade drew to its close, the ominous rumblings of limited wars, that had echoed across both oceans throughout the period, grew louder. Naval expansion was authorized; the pilot training program was stepped up. Ships that would make history in World War II were designed and laid down. Aircraft that would operate from their decks, in the bold advance across the Pacific, were on the drawing boards; and some were getting their feel of the air. As the rumblings burst forth into the full force of a European war and the United States declared its neutrality; the Navy, strongly bolstered by aviation, patrolled the Atlantic seaboard in operations that were strangely similar to those which the same units would later perform under conditions of war.

1930

16 January *Lexington* completed a 30-day period in which she furnished electricity to the city of Tacoma, Wash., during an emergency arising from a failure of the city's power supply. The electricity supplied by the carrier totaled 4,251,160 kilowatt-hours.

29 January Hydraulic arresting gear, a type which eventually proved capable of great refinement to absorb the energy of heavy aircraft landing at high speeds, was reported to be under development at NAS Hampton Roads, Va.

1930—Continued

31 January Lieutenant Ralph S. Barnaby made a successful air-to-ground glider flight, dropping from the rigid dirigible *Los Angeles* (ZR-3) at an altitude of 3,000 feet over Lakehurst, N.J.

7 February Action to develop a means of recovering seaplanes by ships underway was initiated by a request from the Bureau of Aeronautics that the Naval Aircraft Factory study the problem and work up designs for a system adaptable in recovering seaplanes of the O2U-3 type.

14 February The first monoplane designed for carrier operations, a Boeing Model 205 fighter later purchased by the Navy and designated XF5B-1, was delivered to NAS Anacostia, D.C., for test. The Board of Inspection and Survey in its report commented adversely on the XF5B-1's landing, takeoff and high altitude characteristics, but recommended further development to obtain a rational comparison of monoplane and biplane types.

15 February The design of retractable landing gear, particularly attractive for use in fighting planes because of its promise to improve performance and thereby enhance military value, had progressed to the point that the Naval Aircraft Factory was authorized to construct working models as a means of establishing the practicability of various retracting mechanisms.

21 March The Martin XT5M-1, first dive bomber designed to deliver a 1,000-pound bomb, met strength and performance requirements in diving tests.

21 April The Bureau of Navigation issued a circular letter directing that no more enlisted applicants be recommended for pilot training. When men already in the system or under instruction completed their course in early 1932, this order caused a temporary lull in enlisted pilot training.

22 April A naval treaty was signed at London, England, by the signatories of the Washington Naval Treaty which carried forward the general limitations of that earlier agreement and provided for further reductions of naval armament. Under the terms applicable to Naval Aviation, the definition of an aircraft carrier was broadened to include ships of any tonnage designed primarily for aircraft operations; and it was agreed that installation of a landing-on or flying-off platform on a warship designed and used primarily for other purposes would not make that ship an aircraft carrier; and further, that no capital ship in existence on 1 April 1930 would be fitted with such a platform or deck.

31 May The last Curtiss Marine Trophy Race, an annual event for service seaplanes, was won by Captain Arthur H. Page, USMC, in an F6C-3 Curtiss fighter with a speed of 164.08 mph. The race was staged over the Potomac off NAS Anacostia, D.C.

First experimental monoplane fighter, XF5B-1 460387



1930—Continued

4 June On the first anniversary of his seaplane altitude record, Lieutenant Apollo Soucek took off from Anacostia in a Wright Apache landplane equipped with a Pratt & Whitney 450-hp engine; and, flying to a new height of 43,166 feet, regained the world altitude record he had held briefly in 1929.

21 July Captain Arthur H. Page, USMC, piloted an O2U from a sealed hooded cockpit on an instrument flight of about 1,000 miles from Omaha, Nebr., to NAS Anacostia, D.C., via Chicago, Ill., and Cleveland, Ohio; the longest blind flight to date. Lieutenant Vernon M. Guymon, USMC, acted as safety pilot and took over the controls only for the landings after Captain Page had brought the plane over the fields at 200 feet.



Page and Guymon made long blind flight 1930 460434

1 September In the race for the Thompson Trophy in Chicago, Ill., Captain Arthur H. Page, USMC, flying an XF6C-6, was the only military entry. Page gained and increased an early lead but on the 17th of 20 laps crashed to his death, a victim of carbon monoxide poisoning.

5 November The Director of Naval Research Laboratory reported that Mr. Leo C. Young and Mr. L. A. Hyland, while conducting experiments in the directional effects of radio, had detected an airplane flying overhead. This led to the formal establishment of a project at the Naval Research Laboratory for "Detection of Enemy Vessels and Aircraft by Radio."

28 November The Chief of Naval Operations, Admiral William V. Pratt issued a new naval air policy, effective 1 April 1931, which essentially reorganized aviation and established it as an integral part of the fleet to operate with it under the direct command of the Commander-in-Chief U.S. Fleet (CINCUS). The policy stressed the importance of fleet mobility and the need for offensive action in protecting against invasion from overseas, assigned the development of the offensive power of the fleet and advanced base forces as the primary task of Naval Aviation, and relegated participation in coast defense to the status of a secondary task. To complete the change, the policy also directed that air stations in strategic naval operating areas henceforth be assigned to, and operate under the Fleet; and only such other stations as necessary for training, test, aircraft repairs and similar support functions would be maintained under shore command.

2 December The seaplane tender *Aroostook* (CM 3), one utility and two patrol squadrons of the Battle Fleet reported for duty to Commander Base Force, thereby providing that command with its first aviation organization.

1931

8 January Further development of dive-bombing equipment and tactics was insured as tests completed at the Naval Proving Grounds, Dahlgren, Va., showed that displacing gear eliminated the recently encountered danger of a bomb colliding with its releasing airplane.

9 January An agreement was announced between the Chief of Naval Operations, Admiral William V. Pratt and the Army Chief of Staff, General Douglas MacArthur, governing the operations of their respective air forces, which climaxed a long standing interservice controversy over the division of responsibilities for coast defense. Under the terms, the functions of the two air forces were closely associated with those of their parent services; the naval air force was defined as an element of the fleet to move with it and to carry out its primary mission; and the Army Air Corps as a land-based air arm to be employed as an essential arm of the Army in performing its general mission, including defense of the coast at home and at possessions overseas.

22 January The Navy ordered its first rotary winged aircraft, the XOP-1 autogyro, from Pitcairn Aircraft, Incorporated.

25 February A new pilot training syllabus was issued which added a course in Advanced Seaplane

1931—Continued



XOP-1, first Navy Autogiro arrives at Anacostia 215856

Training and returned the courses in Bombing and Torpedo, and Observation and Gunnery, dropped in November 1929, thereby expanding the regular flight course to 258.75 hours and, for those also taking Advanced Combat, to 282.75 hours. The ground school course was also expanded in some areas and with the inclusion of a short course in photography, totaled 386.5 hours.

2 March A propeller development program, which led to the adoption of variable pitch propellers, was initiated with the award of a contract to Hamilton Standard Propeller Company for two such propellers suitable for use on fighting planes.

3 March A recommendation that two officers from the postgraduate aeronautical engineering group be selected for study at the California Institute of Technology (CalTech) was approved. As a result, the policy of assigning postgraduate students to civilian institutions was broadened to permit greater specialization, and for the next three school years students were assigned in two groups: one to MIT where emphasis was on aircraft engines, the other to CalTech for study of aircraft structures.

31 March When a disastrous earthquake shook Nicaragua and destroyed most of the city of Managua, *Lexington* was ordered from Guantanamo Bay, Cuba, to assist other Navy and Marine units in relief operations. Early the next afternoon, she inaugurated carrier aircraft relief operations in the U.S. Navy, by launching five planes carrying medical personnel, supplies and provisions to the stricken city.

1 April A reorganization of the U.S. Fleet into Battle, Scouting, Submarine and Base Forces provided for the

appointment of type commanders for each type of ship and for aircraft, and designated the aviation type commands in the Battle, Scouting and Base Forces as Commander Aircraft (name of Force).

2 April A contract for the XFF-1 two-seat fighter, the first naval aircraft to incorporate retractable landing gear for the purpose of improving aerodynamic cleanliness and thereby increasing performance, was issued to Grumman.

9 April A contract was issued to the Glenn L. Martin Company for 12 BM-1 dive bombers. This aircraft, which was a further development of the XT5M-1, was the first dive bomber capable of attacking with a heavy (1,000 pound) bomb to be procured in sufficient quantity to equip a squadron.



FF-1, first fighter with retractable landing gear 1061485



BM-1, dive bomber carrying 1000-pound bomb 1053772

1931—Continued

1 June New specifications for aircraft markings were issued which directed use of 20-inch-wide colored bands around the fuselage of section leader planes, assigning royal red, white, true blue, black, willow green and lemon yellow for sections 1 through 6 respectively. The same order permitted use of distinguishing colors on the empennage whenever two or more squadrons of the same class operated together.

1 July The Naval Air Stations at Coco Solo, C.Z. and Pearl Harbor, T.H., were redesignated Fleet Air Bases to conform with their transfer to the U.S. Fleet and their function of providing mobile air units for fleet operations.

19–20 July A Navy balloon, piloted by Lieutenant Thomas G. W. Settle and Lieutenant (jg) Wilfred Bushnell, won the Litchfield Trophy and the National Elimination Balloon Race at Akron, Ohio, with a distance of 195 miles to Marilla, N.Y., thereby qualifying for the International Race.

10 September Rear Admiral William A. Moffett directed that the bureau's program for test and evaluation of variable-pitch propellers be expedited and noted that in recent tests at NAS Anacostia, D.C, a variable-pitch propeller on a Curtiss F6C-4 had provided a 20 percent reduction in takeoff run and a slight increase in high speed.

23 September Lieutenant Alfred M. Pride piloted the Navy's first rotary wing aircraft, an XOP-1 autogiro, in landings and takeoffs aboard *Langley* while underway.

26 September The keel for *Ranger*, first ship of the U.S. Navy to be designed and constructed as a carrier, was laid at the Newport News Shipbuilding and Drydock Company, Newport News, Va.

30 September The Bureau of Aeronautics reported that studies were being conducted on catapulting landplanes on wheels. This, the preliminary step in the development of flush deck catapults for launching landplanes from carriers, visualized the installation of



XOP-1 Autogiro landing aboard Langley 215836



The 14,500-ton Ranger, CV-4, was the first American ship designated as an aircraft carrier from the keel up 428440

1931—Continued

powder catapults on hangar decks. The development was expanded to include the use of compressed air, and by the end of 1932 the Naval Aircraft Factory had successfully launched an O2U-3 landplane with this latter gear.

7 October In a bombing demonstration conducted from an altitude of 5,000 feet against the anchored target ship *Pittsburgh* (Armored Cruiser No. 4), 50 percent hits were obtained with the newly developed Norden Mark XV bombsight as compared to slightly over 20 percent hits with the earlier Mark XI model.

7 October Evaluation of the experimental K Class airship, the K-1, was begun at NAS Lakehurst, N.J. It featured an enclosed all-metal car and a 320,000 cubic-foot envelope, which made it the largest non-rigid airship designed especially for the Navy until that time.

27 October The rigid airship *Akron* (ZRS-4), having made its first trial flight on 23 September 1931 at Akron, Ohio, was commissioned at NAS Lakehurst, N.J., with Lieutenant Commander Charles E. Rosendahl as Commanding Officer.

2 November Marine Scouting Squadrons VS-14M and -15M embarked on *Saratoga* and *Lexington*, respectively, to operate as an integral part of Aircraft, Battle Force. These squadrons, first of the Marine air units assigned to carriers, were carrier-based until late 1934; and from then until 1941, other Marine squadrons maintained some carrier proficiency through periodic operations afloat.

3 November The rigid dirigible *Akron* (ZRS-4) made a 10-hour flight out of Lakehurst, N.J., carrying aloft 207 persons, a new record for the largest number of individuals carried into the air by a single craft.

9 December *Langley* completed nine days of operations off the New England coast in which the cold weather operating capabilities of carrier deck gear and carrier aircraft, and the effectiveness of protective flight clothing were given a practical test.

1932

9 January The Secretary of the Navy informed the Secretary of War of work being conducted at the Naval Research Laboratory in detecting ships and aircraft by radio and suggested that since one obvious application of the method was in air warning systems for large areas, the Army might be interested in undertaking further work.

24 March The Army Air Corps, in response to enthusiastic reports from its observers who had witnessed the performance of the Mk XV Norden bombsight in trials against *Pittsburgh* (Armored Cruiser No. 4) the previous October, requested the Navy to provide it with 25 Mk XV sights. This was the Army's first commitment for the Navy-developed sight that was to become essential to high altitude precision bombing in World War II.

2 April Torpedo Squadron 5A (ex-VT-20) sailed from the Philippines aboard *Jason* (AC 12). When VS-8A, the only squadron remaining in the area, was disestablished



Langley was converted from a carrier to a seaplane tender by removal of forward flight deck 465883

1932—Continued

the following June, aviation in the Asiatic Fleet was reduced to the observation aircraft on board cruisers.

2 May The Bureau of Aeronautics directed that hydraulic cylinder type arresting gear be installed on *Langley* to replace weight type gear used earlier. This decision resulted from operational experience of *Langley* with two sets of hydraulic gear installed in June and September 1931.

18 May With enough qualified students on hand to fill several classes at Pensacola, Fla., the practice instituted in 1930 of waiving the requirement of two years of sea duty before assignment to elimination flight training was discontinued. In effect, this marked the beginning of almost a year in which no new prospective aviators were enrolled.

1 June The resignation of the Assistant Secretary of the Navy for Aeronautics David S. Ingalls was accepted by the president and it was announced that, as an economy measure, the appointment of a successor was not contemplated. The office remained vacant until 1941.

30 June *Los Angeles* (ZR-3) was decommissioned for economy reasons at NAS Lakehurst, N.J., after eight years of service and over 5,000 hours in the air.

1 July The requirement of an earlier law that 30 percent of the Navy's pilots be enlisted men, was reduced to 20 percent as an amending act became effective. The restrictive nature of the requirement was modified by an additional provision that it was applicable except when, in the opinion of the Secretary of the Navy, it was impracticable to obtain the required number of enlisted pilots.

28 July Research into the physiological effects of high acceleration and deceleration, encountered in dive bombing and other violent maneuvers, was initiated through a Bureau of Aeronautics allocation of funds to the Bureau of Medicine and Surgery for this purpose. The pioneer research, pointing to the need for anti-G or anti-blackout equipment, was performed at Harvard University School of Public Health by Lieutenant Commander John R. Poppen, MC, under the direction of Dr. C. K. Drinker.

25-27 September The International Balloon Race, held at Basel, Switzerland, was won by Lieutenant Thomas G. W. Settle and Lieutenant Wilfred Bushnell in a flight which ended on the Polish-Latvian border

near Vilna and established a new world distance record of 963.123 miles for balloons in three categories of volume.

10 November A contract for 125 sets of GF radios was issued to the Aviation Radio Corporation. This was the first production order for radio equipment suitable for installation in single-seat fighters.

22 November Following tests of the OP-1 autogiro in Nicaragua, Major Francis P. Mulcahy, USMC, reported that the autogiro's chief value in expeditionary duty was in inspecting small fields recommended by ground troops as landing areas, evacuating medical "sitting" cases, and ferrying important personnel.

1933

4 January A new plan for postgraduate work was approved which combined the existing programs for specialists and for the General Line, and extended the aeronautical engineering program to three years. Under the new plan, all officers selected for postgraduate work began with one year in the School of the Line. Those demonstrating ability and interest in advanced technical specialties were given a second year in that area of study and, in the third year, were sent to a civilian institution for work, in most instances leading to a Master of Science degree.

25 January The Bureau of Navigation announced that the assignment of naval officers to flight training at Pensacola, Fla., would be resumed in May or June, or almost a year since the last group had been assigned.

16 February The president presented to Colonel Nathan D. Ely, USA (Ret), the Distinguished Flying Cross, awarded posthumously to Colonel Ely's son, Eugene B. Ely, for extraordinary achievement as a pioneer aviator and for significant contribution as a civilian to the development of aviation in the Navy when in 1910 and 1911 he demonstrated the feasibility of operating aircraft from ships.

1 April Fleet Aviation was reorganized and assigned to two principal commands each exercising type functions within his Force, and one of whom, Commander Aircraft, Battle Force, served as type commander for all fleet aircraft. Carriers, with their aircraft, were assigned to Battle Force and all tender-based air and Fleet Air Bases at Pearl Harbor, T.H., and Coco Solo, C.Z., were assigned to Base Force. The command Aircraft Scouting Force was abolished.

1933—Continued

4 April The rigid airship *Akron* (ZRS-4) crashed in a severe storm off Barnegat Light, N.J. Among the 73 fatalities were Rear Admiral William A. Moffett, Chief, Bureau of Aeronautics, and Commander Frank C. McCord, Commanding Officer of *Akron* (ZRS-4).

18 April Lieutenant George A. Ott piloting an O2U seaplane, with Lieutenant (jg) Bruce A. Van Voorhis as passenger, made the first operational test of a device, later called the Plane Trap, installed on the stern of *Maryland* (BB 46). Proposed by Lieutenant Lisle J. Maxson, the device was a V-shaped float attached to the stern of the ship by a system of struts which permitted it to ride at an even depth in the water. In operation, the seaplane taxied toward the float pushing a knobbed probe on the nose of its pontoon into the V-float which engaged the probe and held the seaplane in position for hoisting aboard. The device was an immediate success and proposals were made to install the same gear on five additional battleships.

29 April The Bureau of Aeronautics recommended resumption of postgraduate instruction in aerology which had been suspended in 1929. By the end of the year, arrangements were completed for a two-year course at the Postgraduate School and a third year at a civilian university.

6 June Two Franklin gliders were received at NAS Pensacola, Fla., for use in a test to determine whether inclusion of glider training in the student flight syllabus would replace or simplify elimination flight training and thereby reduce dual instruction time. Instructor training in the new craft began immediately under the direction of Lieutenant Ralph S. Barnaby, and glider training, as an experimental feature of the training program, continued into 1936.

13 June A contract for the development of special radio equipment for making blind landings aboard carriers was issued to the Washington Institute of Technology.

16 June Under the terms of the National Industrial Recovery Act, the president allotted \$238 million to the Navy for the construction of new ships, including two aircraft carriers. In less than two months, contracts were awarded for carriers Nos. 5 and 6, eventually commissioned as *Yorktown* and *Enterprise*.

22 June A new underway recovery device, proposed by Lieutenant George A. Ott, senior aviator on *Maryland* (BB 46), was tested at sea off Point Firmin,

Calif. The device resembled a cargo net fitted with a wood spreader at its forward edge and canvas underneath which, when towed by the ship, rode the surface forward and was slightly submerged aft so that the seaplane could taxi on it and catch the net with a hook on the bottom of its pontoon. Recovery over the stern was successful on the first attempt. An alongside recovery, necessary for ships with cranes amidships, was tried next. With the net trailing from a boom, the seaplane again caught the net but then swung into the ship and crumpled its wing. In spite of the partial failure, the possibilities of the plane net were apparent and later adjustments corrected the initial deficiencies.

23 June *Macon* (ZRS-5), having made its first flight on 21 April, was commissioned at Akron, Ohio, with Commander Alger H. Dressel as commanding officer.



Macon ZRS-5 prepares to take protective fighters on board. There was space for five planes in the hangar 4284422

8 August Commander, Aircraft Battle Force, requested authority to use variable-pitch propellers during forthcoming exercises on six Boeing F4B-4s of VF-3, based aboard *Langley*, and on one F4B-4 of VF-1, based aboard *Saratoga*. This request, which stemmed from successful trials conducted by VF-3 aboard the *Langley*, marked the initial service acceptance of the variable-pitch propeller.

9 August Commander Battle Force, commenting on tests of the plane net made by *Maryland* (BB 46), pointed out that construction of the net and pontoon hook were well within the capacity of ships company and directed that all battleships under his command experiment with, and attempt to develop, techniques for underway recovery.

2-4 September The Navy balloon of Lieutenant Commander Thomas G. W. Settle and Lieutenant Charles H. Kendall took second place in the Gordon Bennett International Balloon Race at Chicago with a

1933—Continued



The Boeing F4B-4 carrier fighter of the 1930s 462618

distance of 776 miles, and their 51 hours in the air set new world records for duration in three categories of volume.

7–8 September Six Consolidated P2Y-1 flying boats of Patrol Squadron 5F, under the command of Lieutenant Commander Herman E. Halland, flew non-stop from Norfolk, Va., to Coco Solo, C.Z., making a record distance formation flight of 2,059 miles in 25 hours 19 minutes.

12 October The rigid airship *Macon* (ZRS-5) departed NAS Lakehurst, N.J., bound for her new home on the west coast at NAS Sunnyvale, Calif. Following the Atlantic coast down to Macon, Ga., and then westward over the southern route to the west coast, the airship arrived at Sunnyvale in the afternoon of the 15th, completing the 2,500 mile nonstop flight in approximately 70 hours.

17 October In an effort to prevent a shortage of pilots as a result of the curtailment in training, additional instruction was authorized for specially recommended student Naval Aviators, who had failed to qualify on their first attempt or whose training had been interrupted. In the next month, authorization of a

requalification course for Naval Aviators and Naval Aviation Pilots, who had been on nonflying duty, was directed toward the same end.

24 October Development of anti-blackout equipment was initiated with an authorization to the Naval Aircraft Factory to develop and manufacture a special abdominal belt in accord with specifications prepared by Lieutenant Commander John R. Poppen, MC, for use by pilots in dive bombing and other violent maneuvers.

28 October A contract was issued to Consolidated for the XP3Y-1 flying boat, marking the initiation of Navy sponsored development of the PBY Catalina series of flying boats.

17 November The sum of \$7,500,000 was allotted to the Navy from funds provided under the National Industrial Recovery Act of 16 June 1933, for the procurement of new aircraft and equipment, thereby permitting the Bureau of Aeronautics to maintain its 1,000-plane program, to equip operating aircraft with modern navigation instruments and radios, and to make other improvements in naval aircraft and their accessories which were not possible under the annual appropriation.

1933—Continued

20 November Lieutenant Commander Thomas G. W. Settle and Major Chester L. Fordney, USMC, flying a 600,000 cubic foot free balloon, set a world's altitude record of 61,237 feet in a flight into the stratosphere with departure from Akron, Ohio, and landing near Bridgeton, N.J.

20 December To effect the organization of the aviation element of the newly formed Fleet Marine Force, Aircraft Squadrons East Coast Expeditionary Forces was redesignated Aircraft One, Fleet Marine Force, and Aircraft Squadrons West Coast Expeditionary Forces became Aircraft Two, Fleet Marine Force.

1934

10-11 January Six Consolidated P2Y-1s of Patrol Squadron 10F, Lieutenant Commander Knefler McGinnis commanding, made a nonstop formation flight from San Francisco, Calif., to Pearl Harbor, T.H., in 24 hours 35 minutes, thereby bettering the best previous time for the crossing, exceeding the best distance of previous mass flights, and breaking a nine-day-old world record for distance in a straight line for Class C seaplanes with a new mark of 2,399 miles.



P2Y-1s of Patrol Squadron 10-F made first non-stop formation flight from San Francisco to Pearl Harbor 426937

14 March Dr. A. Hoyt Taylor, head of the Radio Division of the Naval Research Laboratory, authorized a project for development of pulse radar (as it was later called) to detect ships and aircraft. The basic concept, which had been proposed by Leo C. Young, involved special sending, receiving and display equipment all mounted in close proximity. This equipment would send out pulses of radio energy of a few microseconds in duration separated by time intervals that were tens to thousands of times longer than the duration of a pulse. Reception of an echo would indicate a target; time of travel to the target and back, the distance; and directional sending or receiving antenna,

the bearing. As compared to the beat in a continuous radio wave, a technique which had been under development at the Naval Research Laboratory for nearly four years, the pulse technique promised to be of much greater utility because it would provide range and bearing as well as detection and because the entire apparatus could be installed aboard a single ship. The feasibility of the pulse technique was based upon new developments of the radio industry including the cathode ray tube, high power transmitting tubes and special receiving tubes.

27 March An act of Congress, approved by the president and popularly known as the Vinson-Trammell Act, established the composition of the Navy at the limit prescribed by the Washington and London Naval Treaties. The act authorized construction of a number of ships, including one aircraft carrier of about 15,000 tons, and in other matters relating to aviation authorized the president to procure naval aircraft for ships and naval purposes in numbers commensurate with a treaty Navy. It also provided that not less than 10 percent of the authorized aircraft and engines be manufactured in government plants. Under the authorization, *Wasp* was laid down in 1936.

28 April The equipment and techniques of alongside recovery by plane net had developed to the point that Commander, Cruisers Battle Force, issued a directive describing the method that would be used by all ships of his command. The success of the method was such that the only plane trap in use, that on *Maryland* (BB 46) was removed in June and underway recovery of seaplanes by battleships and cruisers soon became routine.

1 May Lieutenant Frank Akers made a hooded landing in an OJ-2 at College Park, Md., in the first demonstration of the blind landing system intended for carrier use and under development by the Washington Institute of Technology. In subsequent flights, Lieutenant Akers took off from Anacostia, D.C., under a hood and landed at College Park, Md., without assistance.

22 May The NS-1, a single-engine biplane trainer, was ordered from Stearman Aircraft Company, Wichita, Kans.

4 June *Ranger* was commissioned at Norfolk, Va., Captain Arthur L. Bristol commanding.

21 June First landings and takeoffs were made aboard *Ranger* by the ship's aviators led by Lieutenant Commander Arthur C. Davis. After completing normal

1934—Continued

operations, the ship went full speed astern and aircraft landed using the bow arresting gear.

30 June A contract was issued to Douglas for the XTBD-1 torpedo bomber. This aircraft was the prototype for the TBD Devastator which remained in operational use through June 1942.



Devastator torpedo plane 1061904

18 July Fourteen Naval Academy graduates, Class 1933, reported at Pensacola, Fla., for special training toward qualification as Naval Aviators. Their designation in January 1935 climaxed a series of events over the somewhat devious route of an honorable discharge upon graduation in 1933; because of lack of vacancies in the Navy, enrollment and training as Flying Cadets in the Army Air Corps; acceptance of the Navy offer of a commission in either the Navy or Marine Corps; and finally, completion of the special course at Pensacola.

19 July Lieutenant Harold B. Miller and Lieutenant (jg) Frederick N. Kivette, flying F9C-2s without their wheel landing gear, dropped from the trapeze of *Macon* (ZRS-5) to scout for *Houston* (CA 30) returning from a cruise in the Pacific with President Franklin D. Roosevelt on board. Because of the improved performance of the air-



Curtiss F9C-2s with airship hoop-on gear 441982



F9C-1 being hoisted into hangar of Akron 441980

craft on this first flight without landing gear, it became standard operating procedure to fly *Macon* (ZRS 5) planes from the trapeze in this configuration.

1 August Lieutenant (jg) Charles H. Kendall and Lieutenant (jg) Howard T. Orville, in a 206.4-mile flight from Birmingham, Ala., to Commerce, Ga., won the National Elimination Balloon Race and qualified for the international race.

1 November The Naval Aircraft Factory was authorized to manufacture and test a flush-deck hydraulic catapult, Type H Mark I. This catapult was designed to launch landplanes from aircraft carriers and was the Navy's initial development of a hydraulic catapult, a type which was to prove capable of extensive refinement and which eventually was to be accepted as a primary means of launching landplanes from carriers.

1934—Continued

15 November Plans to install hydraulic flush deck catapults aboard carriers were formalized in a Bureau of Aeronautics request that space be reserved on *Yorktown* and *Enterprise* for two bow catapults on the flight deck and one athwartships on the hangar deck.

18 November A contract was issued to the Northrop Corporation for the XBT-1, a two-seat Scout and 1,000-pound dive bomber. This aircraft was the initial prototype in the sequence that led to the SBD Dauntless series of dive bombers introduced to the fleet in 1938 and used throughout World War II.



XBT-1, heavy dive bomber, forerunner of SBD 1053784

14 December Reinflation of the rigid airship *Los Angeles* (ZR-3) was completed, and she became airborne in the hangar at NAS Lakehurst, N.J., after nearly three years of decommissioned status. Although not flown again, she continued in use as a test and experimental ship for another five years and, after having served that purpose, was stricken from the inventory on 29 October 1939. Dismantling was completed in 7 weeks.

15 December The Secretary of the Navy approved acceptance of the XO3C-1, a single-engine biplane observation seaplane; subsequently converted to the XSOC-1. Aircraft of this type were operated from battleships and cruisers from late 1935 through World War II.

21 December Flight test of the NS-1, Stearman biplane trainer, was completed at NAS Anacostia, D.C.

1935

5 January The Bureau of Navigation stated that Lieutenant Commander John R. Poppen, MC, would be ordered to the Naval Dispensary, Philadelphia Navy Yard, with additional duty at the Naval Aircraft Factory, to observe pilots, conduct their annual physi-



Curtiss SOC-1 catapulted from heavy cruiser 41061

1935—Continued

cal examinations and work on hygienic and physiological aspects of research and development projects. This was the first assignment of a Flight Surgeon to the Naval Aircraft Factory other than as part of a specific project.

14 January Squadrons assigned to *Ranger* made the first of a series of cross-country flights from Norfolk, Va., to Hartford, Conn., and Buffalo, N.Y., to test the functioning of carrier aircraft, special equipment, and flight clothing under the exacting conditions to be encountered in cold weather. When the tests were completed on 2 February, the lessons learned were used in preparing for tests aboard *Ranger* the next winter.

22 January The Federal Aviation Commission, appointed by the president as provided in the Air Mail Act of 12 June 1934, submitted its report which in essence set forth a broad policy covering all phases of aviation and the relation of the government thereto. A major share of its recommendations referred to commercial and civil aviation and in general stressed the needs for a strong air transport, for expanding airport facilities, for improving provisions for aviation in government organization, and for supporting the welfare of the aviation industry, particularly through the establishment of more realistic procurement practices and policy. For military aviation, the commission recommended: continued study of air organization toward more effective employment of aviation and closer interservice relationships, expansion of experimental and development work and its close coordination through the NACA, expansion of the Reserve organizations and larger appropriations to support them, and a modification of personnel policies to permit assignment of officers with special engineering ability and industrial experience to continuous duty related to their specialty.

9 February The XN3N-1, prototype of the Yellow Peril primary trainer, was ordered from the Naval Aircraft Factory.

12 February After encountering a severe gust of wind which caused a structural failure, the rigid airship *Macon* (ZRS-5) crashed off Point Sur, Calif., with two fatalities.

12 March The Navy issued a contract to Pitcairn Autogiro Company to remove the fixed wings from the XOP-1, thereby converting it to the XOP-2 which thus became the Navy's first heavier-than-air aircraft without fixed wings.

15 April Passage of the Aviation Cadet Act created the grade of Aviation Cadet in the Naval and Marine Corps Reserves. The act set up a new program for pilot training in which otherwise qualified college graduates between the ages of 18 and 28 would be eligible for one year of flight instruction, benefits of pay, uniform gratuities and insurance; and would, after serving three additional years on active duty, be commissioned as Ensigns or Second Lieutenants, be paid a bonus of \$1,500, and be returned to inactive duty as members of the Reserves.

1 May A new pilot training syllabus was issued requiring completion of about 300 hours of flight instruction and 465 hours of ground school in a total time of one year. The new course made no differentiation between student Naval Aviators and Student Aviation Pilots, but specified an additional 90 hours of indoctrination courses for members of the Reserve.

5 June The designation of specially qualified officers for the performance of aeronautical engineering duty only (AEDO) was authorized by an act of Congress. The appointment of a board in September to select the first officers for this AEDO designation and the subsequent approval of its report by the Secretary brought about the assignment of 11 officers of the line and 33 from the Construction Corps to this new specialist category.

20 July The first class of Aviation Cadets to report for flight training convened at NAS Pensacola, Fla. First of the group to become a Naval Aviator was Elliott M. West who was designated on 12 June 1936 and assigned number 4,854.



XN3N, Yellow Peril, training plane built at NAF 1061654

1935—Continued

30 July The first blind landing aboard a carrier was made by Lieutenant Frank Akers, who took off from NAS San Diego, Calif., in an OJ-2 with hooded cockpit, located *Langley* underway in an unknown position, and landed aboard catching the number four arresting wire. Lieutenant Akers subsequently received a Distinguished Flying Cross for this flight.

26 September The president approved a joint Army-Navy proposal for the transfer of air station properties, climaxing several years of study and discussion of the joint use of aviation facilities in certain areas. By this approval and a subsequent Executive Order, the Army agreed to turn over to the Navy: Rockwell Field on North Island, Calif., Luke Field on Ford Island, T.H., and Bolling Field at Anacostia, D.C., while the Navy agreed to turn over to the Army the Naval Air Station at Sunnyvale, Calif. In this exchange, it was understood that the Army would construct new fields at Bolling adjoining its previous location, and Hickam Field on Oahu, T.H.



Naval Air Station Anacostia (foreground), old Bolling Field (background) prior to acquisition by Navy 1061655

5 October The first G Class airship, the G-1, was delivered to NAS Lakehurst. This airship, formerly the Defender of Goodyear's commercial fleet, was used by the Navy for training purposes.

14-15 October Lieutenant Commander Knefler McGinnis, Lieutenant (jg) James K. Averill, NAP Thomas P. Wilkinson, and crew of three flew an XP3Y-1 Consolidated patrol plane, powered with two 825-hp Pratt & Whitney engines, from Cristobal Harbor, Canal Zone, to Alameda, Calif., in 34 hours 45 minutes and established new world records for Class C seaplanes of 3,281.383 miles airline distance and 3,443.255 miles brokenline distance.



XP3Y-1 commanded by K. McGinnis set 3443-mile record on flight from Panama to Alameda, October 1935 1053771

15 November The Chief, Bureau of Aeronautics, approved recommendations from a fighter design competition and thereby initiated development of the Grumman XF4F-1 biplane and the Brewster XF2A-1 monoplane. The developmental sequence thus set in motion, although it included many subsequent changes and modifications, provided prototypes of the Navy's first-line fighters in use when the United States entered World War II.

1936

20 January The Bureau of Engineering, acting in response to a request from the Bureau of Aeronautics, initiated naval support to the Bureau of Standards for the development of radio meteorographs. These instruments, later renamed radiosondes, were to be attached to small free bal-



First production monoplane fighter, Brewster F2A 16054

1936—Continued

loons and sent aloft to measure pressure, temperature and humidity of the upper atmosphere, and to transmit this information to ground stations for use in weather forecasting and flight planning.

22 January *Ranger*, with 23 aircraft on board, arrived in Cook Inlet, Alaska, and began three weeks of operational tests to study the effects of cold weather on operating efficiency and to determine material and other improvements necessary for increasing carrier capabilities under extreme weather conditions.

18 March The flight test of the XN3N-1, prototype of the Yellow Peril, a primary trainer biplane, was completed at NAS Pensacola, Fla.

1 April The Marine Corps Aviation Section, which had been set up independently under the Commandant in the previous year, was established as a Division. With the change, the Officer-in-Charge was given the title Director of Aviation and as such continued to serve in the dual capacity of advisor to the Commandant on aviation and head of the Marine Corps organization in the Bureau of Aeronautics, under an arrangement which had been in effect since the establishment of that Bureau.

28 April R. C. Guthrie and Robert M. Page, at the Naval Research Laboratory, began testing a laboratory model of a pulsed radio wave detection device (pulse radar). As tests proceeded, aircraft were detected at distances up to 25 miles.

6 May Construction of the facility, which was later named the David W. Taylor Model Basin, was authorized by legislation, providing buildings and appliances for use by the Bureau of Construction and Repair in investigating and determining shapes and forms to be adopted for U.S. vessels, including aircraft.

11 June In an effort to adapt commercial airplane maintenance techniques to naval use, the Bureau of Aeronautics authorized Commander, Aircraft Base Force, to provide patrol squadrons with an extra aircraft for use as a rotating spare to replace squadron planes that were undergoing maintenance inspection.

10 July The Chief, Bureau of Aeronautics, approved a program of improvements to the F4F and F2A fighters being developed by Grumman and Brewster. Most important were the conversion of the Grumman design from a biplane to the monoplane XF4F-2 prototype for the F4F Wildcat of World War II, and the

installation of larger engines in both, which promised a top speed of 300 mph.

21 July Lieutenant Commander Delmer S. Fahrney received orders to report to the Chief of the Bureau of Aeronautics and the Director of the Naval Research Laboratory for duty in connection with an experimental project. This marked the initial step in implementation of a recommendation made by the Chief of Naval Operations the preceding May that radio controlled aircraft be obtained for use as aerial targets. Fahrney, in his subsequent report, not only proposed a procedure for developing radio controlled target planes but also recognized the feasibility of using such aircraft as guided missiles.

23 July A contract was awarded to Consolidated for the XPB2Y-1 four-engined flying boat. This aircraft had been selected for development as a result of a design competition held late the previous year, and in later configurations, it became the Navy's only four-engined flying boat to be used as a patrol plane during World War II.

7 August A change in the flight syllabus was approved which placed more emphasis on instrument flying. The new course, which was inserted between the service seaplane and fighter courses, was given by a new instrument flying unit formed at Pensacola, Fla., for the purpose, and included six hours in Link trainers, nine hours of modified acrobatics in NS aircraft, and two hours radio range flying under the hood.

19 August Lieutenant Boynton L. Braun, pilot and ACOM W. B. Marvelle completed test bombing against the submarine R-8 off the Virginia Capes. Flying a T4M-1 at an altitude of 2,500 feet, they dropped twelve 100-pound bombs in a 2-day period and obtained four near-misses with a cumulative effect which caused the submarine to sink.

15 September *Langley*, first aircraft carrier of the U.S. Navy, was detached from Battle Force and assigned to Commander, Aircraft Base Force, for duty as a seaplane tender. After a brief period of operation, she went into the yard for conversion, from which she emerged early in 1937 with the forward part of her flight deck removed.

1937

27 February Expansion of the Working Committee of the Aeronautical Board and the extension of its functions to include work in aeronautical standardization, were approved by the Secretaries of the War and Navy Departments. By this decision, interservice

1937—Continued

efforts in standardization changed from a part-time program of annual conferences to one employing a joint staff of officers and civilians on a full-time basis.

15 March The Bureau of Aeronautics assigned distinguishing colors to each aircraft carrier for use as tail markings by all squadrons on board, thereby changing the existing practice of assigning colors to squadrons and eliminating the confusion resulting when squadrons transferred from one carrier to another.

21-22 June Patrol Squadron 3, with 12 PBV-1 Catalinas under the command of Lieutenant Robert W. Morse, flew nonstop from San Diego, Calif., to Coco Solo in the Canal Zone, completing the 3,292-mile flight in 27 hours and 58 minutes.

30 May A contract was issued to the Martin Company for the XPBM-1 two-engined flying boat patrol plane. The aircraft was the initial prototype in the PBM Mariner series of flying boats used during and after World War II.

1 July The system of designating squadrons was revised to provide for numbering each carrier squadron according to the hull number of its carrier, each battleship and cruiser squadron the same as the number of its ship division, each Marine Corps squadron according to its Aircraft Group, and patrol squadrons serially without regard to assignment. The change also abolished the use of suffix letters to indicate organizational assignment, except for Naval District and Reserve squadrons, and interposed the M for Marine Corps squadrons between the V prefix and mission letters.

2 July The Navy agreed to accept transfer of Army airships and lighter-than-air equipment. Included in the transfer were the airships TC-13 and TC-14, used for antisubmarine patrol in the early stages of World War II.

15 July The Ship Experimental Unit was placed in operating status at the Naval Aircraft Factory and made responsible for development and testing of equipment and techniques for carrier landings. This unit consisted of officers and men which were transferred from NAS Norfolk, Va., where this function had been performed since 1921.

6 August A contract was issued to Goodyear for two new non-rigid airships, the L-1 for training purposes, and the K-2 for coastal patrol.

9 August The contractor's demonstration flights of the XOZ-1 rotary-winged aircraft, which included a water takeoff, were completed at the Naval Aircraft Factory. Pennsylvania Aircraft Corporation had modified this aircraft from an N2Y-1 trainer into an experimental gyroplane by installing a new engine and a rotary wing with cyclic control.

9 September The XPBS-1, a four-engined monoplane flying boat built by Sikorsky Aircraft, made its first flight. This aircraft, constructed as a long-range patrol plane, was later used as a transport.

30 September *Yorktown* was commissioned at Norfolk, Va., with Captain Earnest D. McWhorter in command.

1 October Patrol aviation with its tenders was transferred from Base Force and assigned to the reestablished type command, Aircraft Scouting Force. With the change, five Patrol Wings, numbered 1 through 5, were established as separate administrative commands over their assigned squadrons.

17 December The XPTBH-2, a twin-float seaplane designed by Hall Aluminum Aircraft Company, Inc. for patrol and torpedo attack, was accepted by the Navy. This was the last twinfloat torpedo plane developed for the Navy.

23 December A successful unmanned radio-controlled flight was made with a JH-1 drone, at the Coast Guard Air Station, Cape May, N.J. Takeoff and landing were made using a landbased radio set; for flight maneuvers, control was shifted to an airborne TG-2.

1938

21 April The delivery of the XF2A-1 to the Langley Memorial Aeronautical Laboratory of the National Advisory Committee for Aeronautics marked the initiation of full-scale wind tunnel tests to determine means of decreasing aerodynamic drag and thereby increasing high speed. These tests, conducted at the recommendation of Commander Walter S. Diehl, indicated that the speed of the XF2A-1 could be increased 31 mph over the 277 mph already achieved, and led to the utilization of this technique in other high-performance aircraft, by both the Army and the Navy. The data thus obtained was also directly applicable to the design of new aircraft.

12 May *Enterprise* was commissioned at Newport News, Va., Captain Newton H. White commanding.

1938—Continued



Enterprise, CV-6 preparing to get underway with all planes of her air group on the flight deck 13554

17 May The Naval Expansion Act, among its provisions for Naval Aviation, authorized an increase in total tonnage of underage naval vessels amounting to 40,000 tons for aircraft carriers, and also authorized the president to increase the number of naval aircraft to “not less than” 3,000. Carriers built as a result of this authorization were *Hornet* and *Essex*, laid down in 1939 and 1941, respectively.

1 June The routine use of radiosondes (or radio meteorographs, as they were then called) to obtain data on weather conditions in the upper atmosphere was initiated at NAS Anacostia, D.C. By the close of the year, *California* (BB 44) and *Lexington* were also outfitted to use radiosondes.

8 June After over two years of evaluation by fleet squadrons and various shore-based naval air activities, the antiblackout or abdominal belt, intended for use by pilots in dive bombing and other violent maneuvers, was returned to a developmental status with a finding by the Commander, Aircraft Battle Force, that the advantages of this belt were not sufficient to offset its disadvantages.

8 June By policy established by the Secretary of the Navy, the provisions for maintenance of aircraft aboard carriers and aircraft tenders were limited to those required for upkeep and minor repairs.

1 July New command billets titled Commander, Carrier Air Group, were authorized, and carrier squadrons were organized into groups each designated by the name of the carrier to which it was assigned.

23 August A contract was issued to Martin for the XPB2M-1 four-engine flying boat. Initially intended as a patrol plane, this craft was later converted to the PB2M-1R Mars transport and served as a prototype for the JRM series of flying boats.

24 August In the first American use of a drone target aircraft in anti-aircraft exercises, *Ranger* fired upon a radio-controlled JH-1 making a simulated horizontal bombing attack on the fleet. This not only heralded a new departure in anti-aircraft practice, but also indicated that radio-controlled aircraft could be used as a training device in the fleet.

14 September A radio-controlled N2C-2 target drone engaged in a simulated dive-bombing attack against the battleship *Utah* (BB 31) in test firing of antiaircraft battery. The proponents of guided missile development view this as the first demonstration of the air to surface missile.

15 October A new specification prescribing color for naval aircraft was issued. Trainers were to be finished in orange-yellow overall with aluminum colored floats or landing gear. The color of service aircraft remained essentially as prescribed in 1925, aluminum overall with orange-yellow on wing and tail surfaces that were visible from above.

2 November A revision of the pilot training syllabus was approved instituting minor adjustments in the flight program and changes of greater significance in the ground program. A special course was added for flight surgeons, celestial navigation was added for

1938—Continued

enlisted students, and gameboard problems were introduced as a practical approach to instruction in scouting and search.

1 December The Hepburn Board, appointed by the Secretary of the Navy in accordance with the act of 17 May, reported on its survey of the aviation shore establishment. Recognizing the demands that would have to be met if the approach of war should precipitate a great expansion, the Board recommended for aviation the enlargement of 11 existing stations and the erection of 16 new ones, including Oahu (Kaneohe), Midway, Wake, Guam, and five other Pacific Islands.

16 December The K-2 airship was delivered to NAS Lakehurst, N.J., for trials. This was the prototype for the World War II K Class patrol airships, of which 135 were procured.



The non-rigid airship K-2, prototype for World War II LTA fleet 1053773

1939

27 March Following the successful experimental refueling of patrol planes by the submarine *Nautilus* (SS 168), the Commander-in-Chief U.S. Fleet (CINCUS), directed that Submarine Division Four and Patrol Wing Two conduct refueling tests at frequent intervals and carry out an Advanced Base problem each quarter to develop to the utmost the possibilities for refueling patrol planes under various conditions.

7 April An amphibian version of the PBY flying boat was ordered from Consolidated. This aircraft, the first successful amphibian patrol plane procured by the

Navy, was the prototype for the PBY-5A which was widely used in World War II.

15 May A contract was issued to Curtiss-Wright for the XSB2C-1 dive bomber, thereby completing action on a 1938 design competition. The preceding month, Brewster had received a contract for the XSB2A-1. As part of the mobilization in ensuing years, large production orders were issued for both aircraft, but serious managerial and developmental problems were encountered which eventually contributed to discarding the SB2A and prolonged preoperational development of SB2C. Despite this, the SB2C Helldiver would become the principal operational carrier dive bomber.

27 May Lieutenant Colonel Alfred A. Cunningham, first U.S. Marine Corps aviator, died at his home in Sarasota, Fla. He reported for flight training at Annapolis, Md., on 22 May 1912, a day now celebrated as the birthday of Marine Corps aviation; and in a relatively short aviation career, served with distinction in many capacities. During World War I, he organized and commanded the first Marine aviation unit, was among those proposing operations later assigned to the Northern Bombing Group and was commanding officer of its Day Wing. In the postwar period, he served as the first administrative head of Marine Corps aviation and then commanded the First Air Squadron in Santo Domingo.

13 June *Saratoga* and the tanker *Kanawha* (AO 1) completed a 2-day underway refueling test off the coast of southern California, thereby demonstrating the feasibility of refueling carriers at sea, a technique which was to prove vitally important to operations in areas where bases were not available.

13 June The Aviation Cadet Act of 1935 was revised to provide for the immediate commissioning as ensigns or second lieutenants of all cadets on active service and the future commissioning of others upon completion of flight training. The law also extended the service limitation to seven years after completion of training of which the first four would be required, and provided for promotion to the next higher grade on the basis of examination after three years of service. A reduction in the bonus payment upon release to inactive duty was made with the provision that aviation cadets already serving in the fleet be given the option of remaining on the old pay scale with the \$1,500 bonus or of accepting commissioned pay and the new \$500 discharge payment.

1 July A standard system of numbering patrol squadrons in reference to wings was adopted by which

1939—Continued

the first digit of a squadron designation number became the same as the wing to which it was attached.

1 July By Executive Order, the Aeronautical Board, the Joint Board (later Joint Chiefs of Staff), the Joint Economy Board and the Munitions Board all previously functioning by an understanding between the Secretary of War and the Secretary of the Navy, began functioning under the direction and supervision of the president as Commander-in-Chief of the Army and Navy.

13 July A Fleet Air Tactical Unit was authorized by the Chief of Naval Operations to provide research and advisory activities relating to operational use of new aircraft.

4 August *Yorktown* and *Enterprise* made successful launchings of SBC-3 and O3U-3 aircraft from flight deck and hangar deck catapults in the first practical demonstration of launching aircraft from carriers by means of a hydraulic flush-deck catapult and in the first demonstrations of catapulting aircraft from the hangar deck.

24 August The Acting Secretary approved the detailing of a medical officer to the Bureau of Aeronautics for the purpose of establishing an Aviation Medical Research Unit.

30 August Lieutenant Commander Thurston B. Clark, flying a twin-engined XJO-3 equipped with tricycle landing gear, made 11 landings aboard and take-offs from *Lexington* off Coronado Roads, thereby demonstrating the basic adaptability of twin-engined aircraft and of tricycle landing gear to carrier operations.

5 September The president proclaimed the neutrality of the United States in the European War and directed that the Navy organize a Neutrality Patrol. In complying therewith, the Chief of Naval Operations ordered the Commander, Atlantic Squadron to establish combined air and ship reconnaissance of the sea approaches to the United States and West Indies for the purpose of reporting and tracking any belligerent air, surface, or underwater units in the area.

8 September The president proclaimed the existence of a limited national emergency and directed measures for strengthening national defenses within the limits of peacetime authorizations.



Scout-Observation O3U-1 amphibious version 1061651

1939—Continued

11 September In the first redeployment of patrol squadrons on the Neutrality Patrol, VP-33, equipped with Catalinas, transferred from the Canal Zone to Guantanamo Bay, Cuba, for operations over the Caribbean. Two days later, the Catalinas of VP-51 arrived at San Juan, P.R., from Norfolk, Va., to patrol the southern approaches to the Caribbean through the Lesser Antilles.

21 September VP-21, with 14 PBY aircraft, took off from Pearl Harbor, T.H., for the Philippines via Midway, Wake and Guam, and with its arrival became the first patrol unit in the Asiatic Fleet since 1932. This squadron and another which arrived later the next year, were the nucleus of Patrol Wing 10, formed in the Philippines in December 1940.

1 October To achieve an immediate expansion of pilot training, the syllabus was revised to set up a program of concentrated instruction which reduced the length of the training period from 12 to 6 months. The new program provided a primary course in landplanes and a basic phase in service landplanes and instrument flying for all students, and restricted each student in the advanced program to specialization in either patrol and utility aircraft, observation planes, or carrier aircraft. Ground school was similarly concentrated and shortened from 33 to 18 weeks.



OS2U Kingfisher used on shipboard and for inshore patrol 407887

14 October The Naval Aircraft Factory was authorized to develop radio control equipment for use in remote controlled flight-testing of aircraft so that dives, pullouts, and other maneuvers could be performed near the aircraft's designed strength without risking the life of a test pilot.

1 December Ensign A. L. Terwilliger was designated a Master Horizontal Bomber, the first Naval Aviator in a fleet squadron to so qualify.

8 December To effect a higher degree of coordination in research, the Secretary of the Navy directed that the Bureaus of Aeronautics and Ordnance acting separately, and the Bureaus of Engineering and Construction and Repair, acting as one unit, designate an officer to head a section in the respective Bureaus devoted to science and technology and also to act as a liaison officer with the Naval Research Laboratory and as a member of the Navy Department Council for Research. By the same order, the duties performed in the Office of the Chief of the Naval Operations concerned with research and invention were transferred to the Office of the Secretary and placed under the administration of the Director, Naval Research Laboratory.

20 December A contract was issued to Consolidated for 200 PBY type aircraft to support an increase in patrol plane squadrons growing out of Neutrality Patrol requirements. This was the largest single order for naval aircraft since the end of World War I.



The landing signal officer waves off an SB2U 1053782



SB2U-1 ready for take-off from Saratoga 105378



*Lexington, Yorktown,
Ranger and Enterprise
1061652*



Camera man in SU-1 shoots oblique photograph 458706

Curtiss SBC-4 Marine Corps Scout dive bomber 16455



Vought SBU-1 Scout dive bomber 1061653



Curtiss XF11-C was later redesignated XBF2C-1 46266



The Douglas RD-2 amphibian in executive colors 5206



Marine Corps field, Quantico, 1931; the base for aircraft squadrons, east coast expeditionary force 1053789