Wings for the Navy

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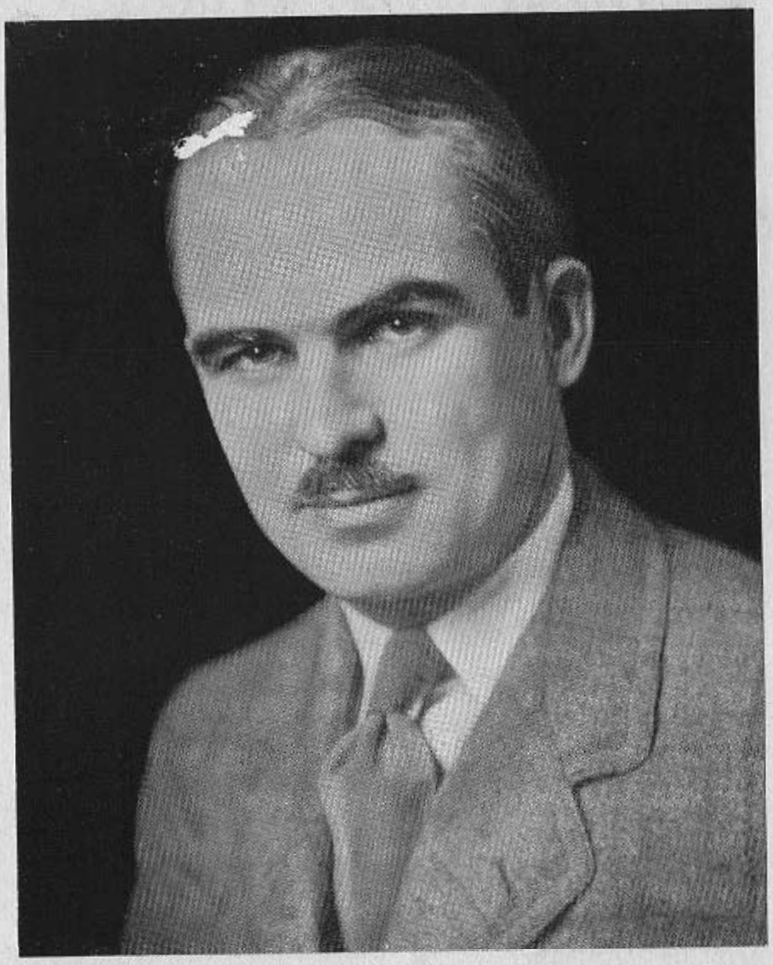
A HISTORY
of
CHANCE VOUGHT AIRCRAFT

STRATFORD • CONNECTICUT
1943



CHANCE MILTON VOUGHT

FOUNDER of the company which has borne his name for more than two decades was the late CHANCE MILTON VOUGHT, pioneer pilot, aeronautical engineer, and aircraft manufacturer — one of the most picturesque and colorful figures in American aviation.

He was one of the foremost figures in American aeronautics. A pioneer pilot, he was strikingly successful measured in terms of finance. He made outstanding contributions in the field of design; he was a manufacturer of unusual ability; he combined this with an artistic taste that gave all his works enduring beauty. He was extraordinarily keen mentally, colorful in personality, tireless in his work, intense in his zeal, and a firm realist.

In developing his new designs he worked practically alone. Before a decision was reached to build something new, he had carefully thought out every detail. Then, with his own hands and with few drawings, he built the first type. At such a time he worked with feverish energy day and night. He seldom left the plant until the new product was finished. When it finally emerged, his design was found to incorporate characteristics which were new and outstanding. Where others sought by cut and try methods and the wind tunnel to arrive at cleanliness of form, he accomplished the same result almost instinctively through his artistic sense. He was a firm believer in the adage that a design which looks well will perform well.

There was never anything radical in Chance Vought's designs, but when they were subsequently tested they were found to be in advance of contemporary ideas. He was keenly sensitive to the reactions of the pilots who flew his ships and was tireless in his efforts to meet their

requirements. He took great pride in the quality of his planes and was a finished workman. He had perhaps more real friends among the flying personnel than any other contemporary designer. His familiarity with developments in the automotive and power boat fields enabled him to incorporate advanced ideas in design and manufacture.

Chance Vought loved the theatre and the life of New York and found recreation there. He watched the city's passing show with amused tolerance, clearly recognizing the realities behind the scenes. Artistic by nature, he appreciated and loved fine technique in the shop, on the stage, or in sports. Frank and forceful in personality, he used picturesque language, particularly in exposition of hypocrisy and sham. In conflict he quickly sensed maneuvering behind the lines and won his battles by direct attack in which his disarming frankness exposed his opponent's weakness.

A host of friends loved him for his personality and admired his genius. His closest friends had many proofs of his devotion and loyalty and were proud of his regard. Strong personal pride influenced his every act. He was that rare combination of outstanding ability and colorful personality which remains intensely human and real. When he died of septicemia in Southampton Hospital, Southampton, L. I., July 25, 1930, he left a niche in American aviation life which no one else could fill because there was none other like him. He was a man among men, loved and respected by his employees.

— Eugene E. Wilson, President,
United Aircraft Corporation

Introduction

CHANCE VOUGHT AIRCRAFT *has occupied a position of leadership in the design and manufacture of high-performance aircraft for more than a quarter century.*

From the earliest type, down through the years to the current Corsair — fastest shipboard fighter plane in the world — Vought airplanes consistently have been ahead of their time in design and performance.

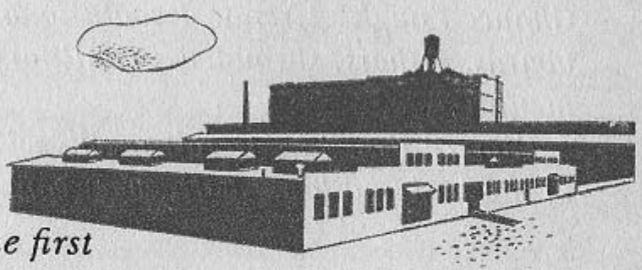
The pioneering spirit which has pervaded the company from its earliest days has enabled Chance Vought to record many "firsts" in aviation history.

A Vought airplane was the first to be accepted by the Navy for regular service aboard battleships and cruisers. Vought was the first to produce a successful monoplane for catapult operation. The original Vought Corsair, built in 1926, set four world's records and was the first airplane ever to be used in unsupported attacks against a fortified position.

More recently the current Corsair, the first airplane to be powered with a 2,000-horsepower engine, blazed a new aeronautical trail by combining a top speed of better than 400 miles an hour with the ability to alight in the limited space of an aircraft carrier.

Today there is the promise of even greater things ahead for Chance Vought Aircraft. Revolutionary designs are on the drafting boards. Others, shrouded in military secrecy, are in the experimental stage.

Chance Vought Aircraft recalls with pride its accomplishments of the past and looks with eager confidence to the future.



LONG ISLAND CITY *plant — The first home of Chance Vought Aircraft*

CHAPTER ONE

Long Island City

THE EARLY HISTORY of Chance Vought Aircraft is part of the biography of the man whose name it bears — Chance Milton Vought, pioneer pilot, aeronautical engineer and aircraft manufacturer.

Born in New York City, February 26, 1890, Chance Vought received his early education in the public schools and at Pratt Institute, Brooklyn. He entered New York University, specializing in engineering, and then entered the University of Pennsylvania.

Upon leaving college in 1910, he became consulting engineer for Harold F. McCormick in Chicago, where he remained for three years in charge of experimental developments.

He started to fly in 1910, with the Wright brothers as his instructors, and qualified as an airplane pilot in 1911. He continued to fly actively until 1917.

In 1912 he became consulting engineer for the Aero Club of Illinois, and in 1913 joined the Lillie Aviation School, Chicago, as aeronautical engineer and pilot. In 1914 he became editor of the pioneer American aviation weekly, "Aero and Hydro". Later in the same year he joined the Mayo Radiator Works in New Haven, Conn., where he designed and constructed an advanced training plane for use of the British government during World War I.

In 1916 he became chief engineer of the Wright Company, Dayton, Ohio, and produced the then famous Model V military biplane.

When the Wright Company merged with the Martin Company to form the Wright-Martin Aircraft Company, New York City, in 1917 he continued with the new firm as aeronautical engineer for a time.

★ STARTED IN 1917

CHANCE VOUGHT AIRCRAFT had its earliest beginnings in 1917 when Mr. Vought, with Birdseye B. Lewis, organized the Lewis and Vought Corporation. He remained consulting engineer and chairman of the board until 1922 when the company was succeeded by the one bearing his name — the Chance Vought Corporation — of which he was president and consulting engineer.

Situated in Long Island City, N. Y., both the Lewis and Vought Corporation and its successor, the Chance Vought Corporation, took prominent positions in the American aircraft industry, being outstanding manufacturers of two-place advanced training and observation planes.

Among those planes, the Navy two-seaters, especially designed for catapulting from battleships and scout cruisers as well as for operation from aircraft carriers, were most widely associated with the Vought name.

The first airplane to be built by the company for the United States government was produced in 1917 and was known as the model VE-7A. It was an easy winner in the U.S. Army competition for training planes that year. Comments made by aviation authorities of that period and still on file today are sufficient proof of the esteem in which the first Vought planes were held by the men who flew them.

Brigadier General William Mitchell, the famous first prophet of air power, said: "This Vought machine, a training type, has all of the air qualities of the single-seater chasse machines and will out-maneuver the French Spad, the Nieuport and the English SE-5."

Lieutenant Colonel V. E. Clark, a former technical head of U.S. Army aviation, declared: "The VE-7 designed by the Chance M. Vought company unquestionably is the finest training airplane yet produced and the only airplane ever designed to be a real production job."

The VE-7A was powered by an Hispano water-cooled engine. The construction of the ship was entirely of wood, fabric covered.

A number of VE-7's were delivered to the Army before the close of World War I and the type proved to be one of the most popular and widely-used two-seater advanced training ships.

Later, when the VE-9 model was developed for the Navy, it was standardized for advanced training and gunnery purposes. It was further developed into the convertible type and used as the original catapult plane equipment of the Navy for observation and gunnery-spotting. When the U.S.S. Langley — the Navy's first aircraft carrier — was commissioned, it was equipped exclusively with VE-9's fitted with arresting gear for deck landings.

★ THE FAMOUS UO-1

IN 1923 the Chance Vought Corporation produced a new model — the UO-1, a U.S. Navy two-place observation plane, equipped with a Wright air-cooled engine, and convertible either as a landplane or seaplane. Of wood and fabric construction, the UO-1 served the Navy with conspicuous success. It was one of the first airplanes to be catapulted from aboard a battleship and was the first to be based with the fleet. Between 1923 and 1926 various versions of the UO-1 were in production, and were powered with the latest model Wright engines. One model, the UO-4, was manufactured for the U.S. Coast Guard.

Developed as a replacement type for the VE series, the UO-1 was adopted by the Navy as the exclusive two-seater seaplane equipment for the new catapult-equipped scout cruisers and the battleships of the fleet. It was also used for deck-landing work on the Langley, and the U.S. Naval Reserve air stations received UO-1's for advanced flight operations and special training.

The 15 first-class battleships of the battle fleets were each equipped with one or more UO-1's. The battleships were the U.S.S. Arizona, California, Colorado, Idaho, Maryland, Mississippi, Nevada, New Mexico, Oklahoma, Omaha, Pennsylvania, Tennessee, Utah, West Virginia and Wyoming.

In addition, two or more UO-1's were used aboard each of the new scout cruisers comprising the Navy's scouting fleets. The cruisers were the U.S.S. Cincinnati, Concord, Detroit, Marblehead, Memphis, Milwaukee, New York, Raleigh, Richmond and Trenton.

Powered with a Wright J-4 engine, the UO-1 had a top speed of 134 m.p.h. as a landplane at sea level. It could reach an altitude of 8,600 feet in ten minutes and had a service ceiling of 18,500 feet. Fuel was carried for a flight of four hours.

★ THE FIRST VOUGHT FIGHTER

ALTHOUGH CHANCE VOUGHT AIRCRAFT has been known throughout most of the last two decades as a manufacturer of observation planes, scout bombers and dive bombers, the company built single-seat fighters prior to its present famous Corsair. The first of these was the VE-11, a special pursuit plane built in 1921. More noteworthy, however, was the FU-1, a high-altitude airplane, built for the Navy in 1925. This was the first service airplane equipped with an air-cooled engine to be placed in production with a blower. Fire power of the FU-1 consisted of two .30 caliber machine guns firing through the propeller arc.

★ THE ORIGINAL CORSAIR

THE ORIGINAL VOUGHT CORSAIR — the O2U-1 — was designed and built for the Navy in 1926 and proved to be one of the most useful and versatile military airplanes ever produced. Convertible as landplanes, seaplanes or amphibians, airplanes of the O2U series gained a memorable spot in the history of military aviation. They established four world's records and were the first planes ever used to conduct an independent and unsupported attack against fortified positions.

The attack took place in 1928 when the U. S. Marines in Nicaragua routed 1,500 rebels from well established positions on the side of a mountain. Four Corsairs took part in the raid, scattering the rebels by strafing and light bombing without the loss of a single plane or

VE-7 trainer, Chance Vought's first airplane, outmaneuvered contemporary 1917 pursuits.

Vought UO seaplanes were standard naval equipment during the early twenties.

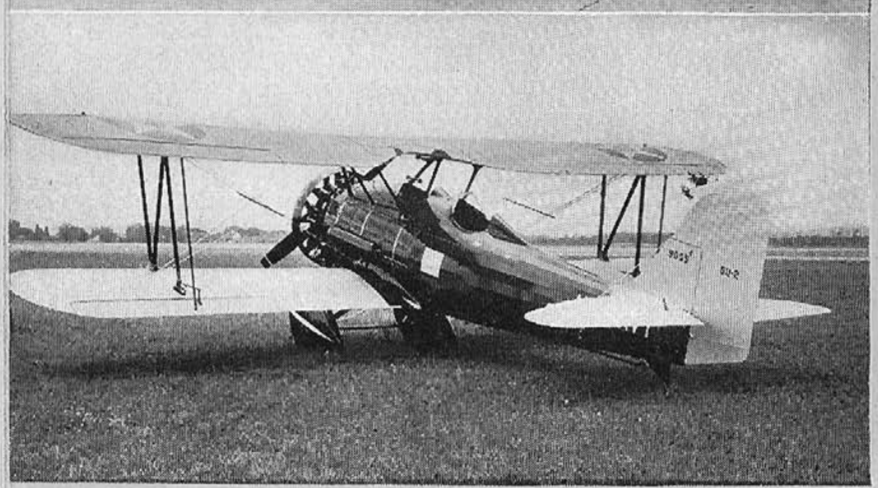
First to be called Corsair was record-breaking O2U-1, built for the Navy in 1926.

The O3U-1, produced in 1929, was a two-place, carrier-based observation plane.

Amphibian landing design made the O3U-1 a versatile multi-purpose plane in 1929.

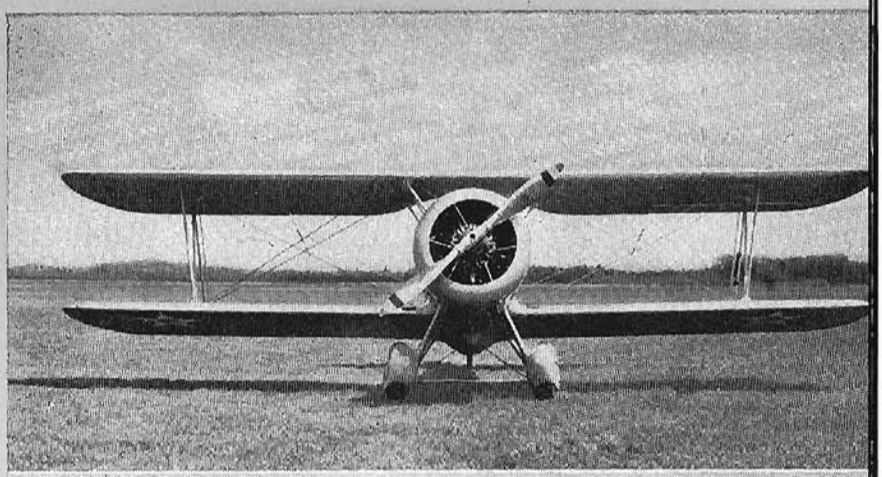
A two-place scout plane, the V-66-E, was built for export to England in 1932.

In 1933, a 600 h.p. Hornet engine powered the O3U-2, later designated the SU-1.



The SU-2, produced in 1933, was a two-place scout plane with a speed of 170 m.p.h.

Designed in 1933, the XSU-4, two-place scouting plane, carried an aerial camera.

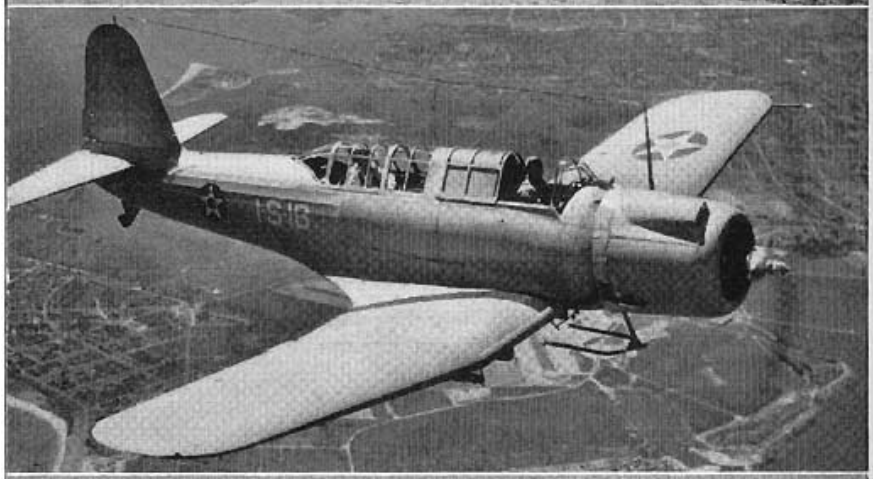


The SU-4 was a Hornet-powered, carrier-based scouting plane built for the Navy in 1933.

Built for Argentina in 1934, the V-80-F was a single-seat fighter capable of 185 m.p.h.

Amphibian design featured the XO5U-1 observation plane produced in 1934.

First Vought 200 m.p.h. plane, the SBU-1, had tapered wings, cowl flaps, was built in 1935.



The SB2U Vindicator, first Vought monoplane, helped smash the Japs at Midway.

Durable OS2U Kingfishers served with distinction in war-time convoy, rescue work.

Official U.S. Navy photo

Convertible as land or sea-planes, Kingfishers saw action in many war theatres.

pilot. Such an accomplishment, had dependable aircraft not been available, would have required a considerable force of ground troops and would probably have resulted in heavy casualties.

The world's records set by the original Corsair, a standard model O2U-1 delivered to the Navy in 1927, were for class C2 seaplanes carrying loads of 500 kilograms (1,102 pounds). The records follow:

Altitude: 22,178 feet, made on April 14, 1927 by Lieut. George R. Henderson, U. S. Navy, and exceeding the former record by 2,000 feet.

Speed, for 100 kilometer closed course: 147.26 m.p.h., made on April 23, 1927, by Lieut. S. W. Callaway, U. S. Navy, surpassing the former mark by 20 m.p.h.

Speed, for 500 kilometer closed course: 136 m.p.h. made by Lieut. J. D. Barner, U. S. Navy, on April 30, 1927, topping the old record by 18 m.p.h.

Speed, for 1,000 kilometer closed course: 130 m.p.h., made by Lieut. Rutledge Irvine, U. S. Navy, on May 21, 1927, bettering the existing time by 27 m.p.h.

★ FIRST TO USE WASP

THE VOUGHT O2U-1 was the first service airplane to use the Pratt & Whitney Wasp air-cooled engine which had a rating of 425 horsepower.

Several models of the early Corsair were developed. One was a jack-of-all-trades. It had a tactical flexibility which enabled it to be readily converted, almost overnight, to perform numerous functions. The operation of landplanes over the water from aircraft carriers involved certain elements of risk which could be removed provided a convertible amphibian feature could be incorporated. Chance Vought, therefore, undertook the development of and produced the first single-float service amphibian.

One early Corsair model could be flown on wheels from an aircraft carrier as a defensive fighter; it could be catapulted as an amphibian from battleships and cruisers, and could land on the carriers for re-servicing. It could be flown as an amphibian from carrier decks and operated safely at long distances from the carriers because it was

capable of landing on the water. By simply removing the wheels from the float it could be operated as a seaplane when desired. Thus the usefulness of this type of plane was expanded and the demand for its manufacture was increased.

★ VOUGHT IN 1926

IN SPITE OF THE FACT that aeronautical activity had been relatively moderate since the end of World War I, the Chance Vought Corporation in 1926 had established itself as a successful aircraft manufacturer.

Perhaps more than any other manufacturer it had carried on a steady business, yearly mounting in volume, had consistently improved its facilities to anticipate America's requirements. In the immediate postwar period its aircraft had been equipped with water-cooled engines of the Hispano-Suiza type. Subsequently it had become the principal producer of air-cooled engined airplanes in this country.

The Vought organization in 1926 was conspicuous for advanced engineering design, for well trained personnel and for the quality of its product. It had an unusual record for continuity of production and consistent operation.

The Vought management was constantly making improvements in its product and in plant facilities to increase further its productive capacity. Although the number of employees had remained practically constant, the weekly rate of output had been steadily increased.

The factory buildings were idealy suited to their purpose. They were equipped with the most extensive and modern machinery and tools then available for wood-work and metal-work. Good lighting, heating and ventilation assured the best possible working conditions, and the personal pride which each man took in his work was reflected in the quality of the beautifully finished product.

During the years from 1926 to 1930, Corsairs produced in the Vought plant at Long Island City were one of the mainstays of U.S. Naval aerial strength. During 1927 and 1928 the total distance flown by Vought airplanes for the Navy was six million, seven hundred thirty-three thousand miles.

Production emphasis throughout this period was on the O2U series

with the O2U-2, O2U-3 and the O2U-4 being turned out for the Navy. Each was similar to the original O2U-1 Corsair, except that each had better performance and more modern equipment than its predecessor.

From a little group of a dozen men who used part of a loft floor, the company had grown until, in 1928 it was the second largest American producer of military airplanes, and in 1929 was the leading manufacturer of its specialized types.

In February 1929, the Chance Vought Corporation joined with other aeronautical organizations in forming the United Aircraft and Transport Corporation, from which was formed the United Aircraft Corporation.

EAST HARTFORD *plant — Chance Vought moved here in 1930. Designed specially as an aircraft plant, it was adjacent to the plant of Pratt & Whitney Aircraft*

CHAPTER TWO

East Hartford

IN 1930 THE CHANCE VOUGHT CORPORATION brought with it to East Hartford a trained staff of creative specialists, several hundred skilled workmen of the finest caliber, and an annual payroll of approximately a million dollars.

The splendid new plant was designed in accordance with the suggestions of Mr. Vought, whose sheer ability and dynamic personality had been responsible in large measure for the rapid early growth of the concern.

Completed just before Mr. Vought's death, the plant had 175,000 square feet of floor space scientifically laid out for the most efficient production and equipped with the finest modern machinery. It adjoined the huge factory of the Pratt & Whitney Aircraft Company and the Hamilton Standard Propellers Corporation, and its final assembly line faced directly on the smooth expanse of Rentschler Field where flight tests and experimental flying took place.

At East Hartford the Chance Vought Corporation continued its brilliant contributions to military aviation. New and improved Corsair observation and scout planes appeared and went into regular operation aboard U. S. Naval aircraft carriers and battleships. Experimentation on other types was carried on with the result that the company later moved into the dive bomber and fighter fields with marked success.

On March 9, 1931, the Chance Vought Corporation received what was described at that time as "the first large order for Naval aircraft placed in eight months." This was for 25 observation planes at a cost of $400,455 — a paltry figure when judged by present standards, but a substantial sum in a day when the nation's industry and business were in the grip of an appalling depression.

The planes, a continuation of the Corsair line, were of the O3U-1 series and were intended for observation work with battleships and cruisers and for scouting with carriers. On the battleships and cruisers they were to be equipped with pontoons and operated from catapults.

On July 25, 1931, the Chance Vought Corporation announced construction of a new airplane with many improvements, making it one of the latest service type airplanes in Naval service. The new ship was designated the O3U-2 and was equipped with a 575 horsepower Pratt & Whitney Hornet engine.

Development of the new aircraft brought to the Chance Vought Corporation a three-million-dollar contract in November of that year when the U. S. Navy placed an order for 122 planes. The company had 330 employees, and it was expected that it would require 14 months to complete the job. The schedule called for production of six planes a month until March 1, 1932, after which there was to be a lapse until June, 1932, to allow time for the construction and testing of new types. After June, the schedule called for nine planes each month until completion of the contract.

This was a ridiculously slow pace compared to present production miracles, but in that era war was something which had ended in 1918. The belief that disarmament was the key to peace was widely accepted, and it was chiefly the efforts of a small band of engineers and men of vision, both in the services and in civilian life, which kept military aviation alive in the United States.

The Chance Vought Corporation's reputation as the manufacturer of superior airplanes spread. In September, 1932, the Brazilian government ordered 23 Corsairs. A few months later, Great Britain purchased the latest Corsair "to investigate the merits of the single-float airplane equipment and to acquire a representative sample of the best American aircraft construction."

During the years from 1930 to 1935, the Chance Vought Corporation produced nearly 500 airplanes of the Corsair line. Although a large portion of these went to the U. S. Navy, many were delivered to foreign governments. Corsairs were delivered to Argentina, Cuba, Peru, the Dominican Republic, Mexico, China, and Siam, as well as to Brazil and Great Britain.

The Chance Vought Corporation reached a milestone in its career on August 13, 1933, when it completed its one thousandth airplane — dating from the company's founding in 1917.

During 1934, production types included the SU-2 and SU-3 Corsairs, scouting aircraft manufactured for the U. S. Navy and powered by Pratt & Whitney Hornet engines, and the O3U-3 equipped with a Wasp engine. The latter type was readily convertible from landplane to seaplane and could be operated from land, water, catapult or carrier.

For export the company had in production the V-80 single-seater fighter, and the V-90, two-seater Corsair, both aircraft being of essentially the same design.

★ A NEW SCOUT BOMBER

IN JANUARY, 1935, the Chance Vought Corporation climaxed three years of research by producing a new scout bomber considerably faster than any airplane previously built at East Hartford.

The new ship, designated as model SBU-1, was the first airplane of all-metal structure to be manufactured by the company and was also the first to be powered with the Pratt & Whitney Twin Wasp Jr. engine, developing 700 horsepower.

The new scout bomber was equipped with a newly-designed cowl, having adjustable trailing edge flaps, developed by Rex B. Beisel, then assistant chief engineer of Chance Vought, A. Lewis MacClain, chief test pilot of Pratt & Whitney Aircraft, and F. M. Thomas of United Aircraft Corporation.

Built to operate from Navy carriers, the SBU-1 had a top speed in excess of 200 miles an hour, the first of its type to attain such speed. The ship differed in many respects from previous Corsair types. Par-

ticular attention was given to aerodynamic "cleanness," and to that end the cabin was completely enclosed, and large wing and tail fillets were incorporated as well as "cuffs" on the struts. External tail bracing was eliminated and the usual inter-aileron struts were concealed.

The Navy had ordered 84 of the new scout bombers, the contract amounting to $1,804,800, exclusive of engines and propellers.

★ HONOR FOR VOUGHT ENGINEER

IN JANUARY, 1935, Mr. Beisel, who had made valuable contributions to the continual improvement of Vought models, was one of three United Aircraft men to win both the Manly and Wright medals for the outstanding aircraft papers of the previous year.

The papers concerned the cowling and cooling of radial aircraft engines and the findings made by Mr. Beisel and his associates made possible marked improvement in the performance of airplanes powered with air-cooled engines. The medals were presented by the Society of Automotive Engineers at its annual banquet in Detroit.

Features incorporated in the new cowling included: 1. Pressure baffles attached to the engine and directing the cooling air against the cylinders; 2. The cowling itself shaped for the best air flow and minimum resistance; and 3. The control flaps attached to the cowl by which the amount of cooling air passing over the cylinders could be regulated at the will of the pilot. The effect of this combination was to provide not only increased top speed in level flight, but to make possible the use of full throttle in climbing without overheating the engine. All these improvements were incorporated in the SBU-1 airplane.

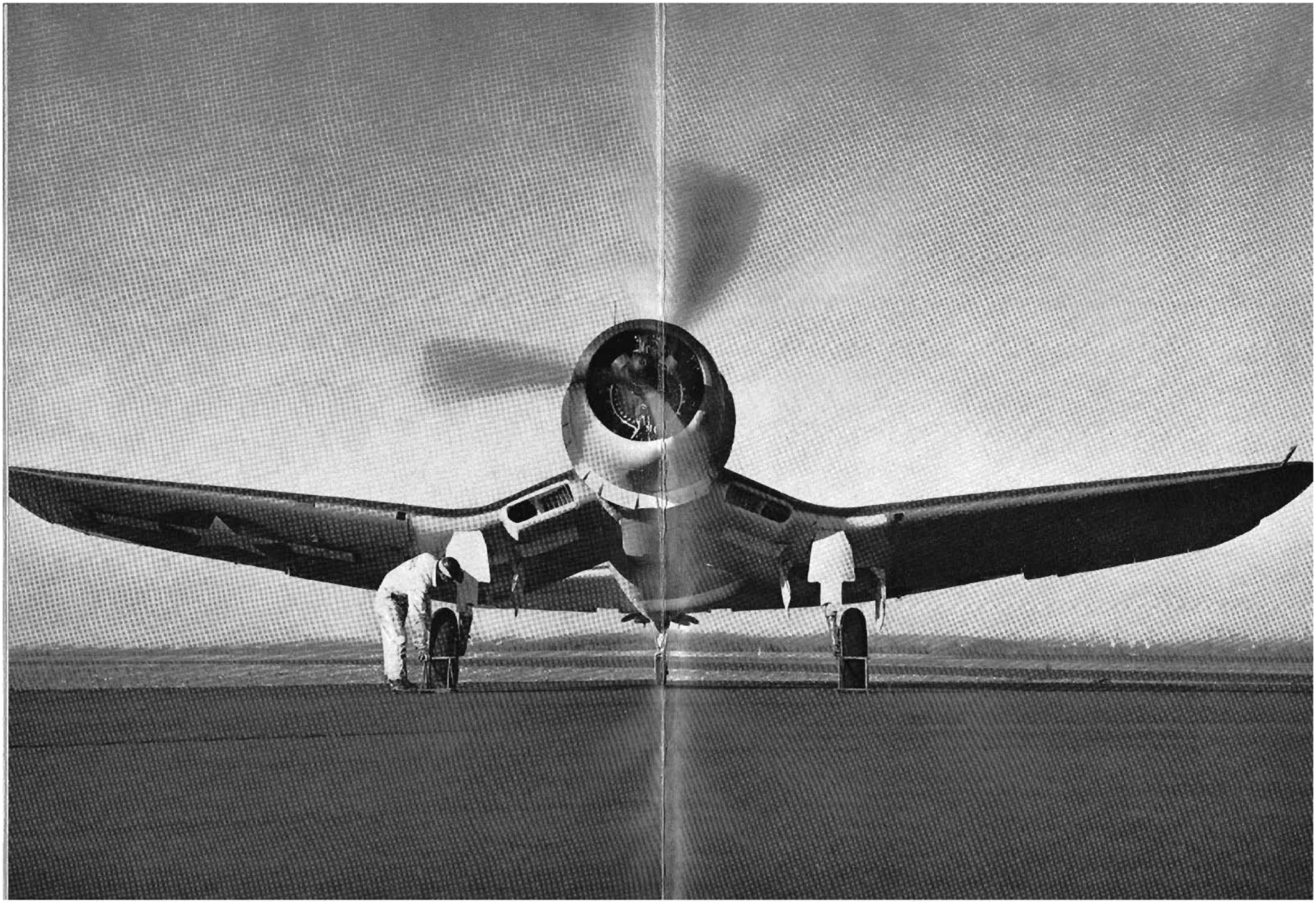
On August 20, 1935, the first of 84 new scout bombers (SBU-1) under construction for the Navy by Chance Vought Aircraft, took off from Rentschler Field, East Hartford, on a test flight under the eyes of company executives and Navy officers. Chief Test Pilot Paul S. Baker was at the controls. The tests were described as entirely satisfactory, and the plane was flown to Washington later for further trials by the Navy. Construction of the remaining 83 planes was progressing favorably, and deliveries were scheduled to be completed early in 1936.

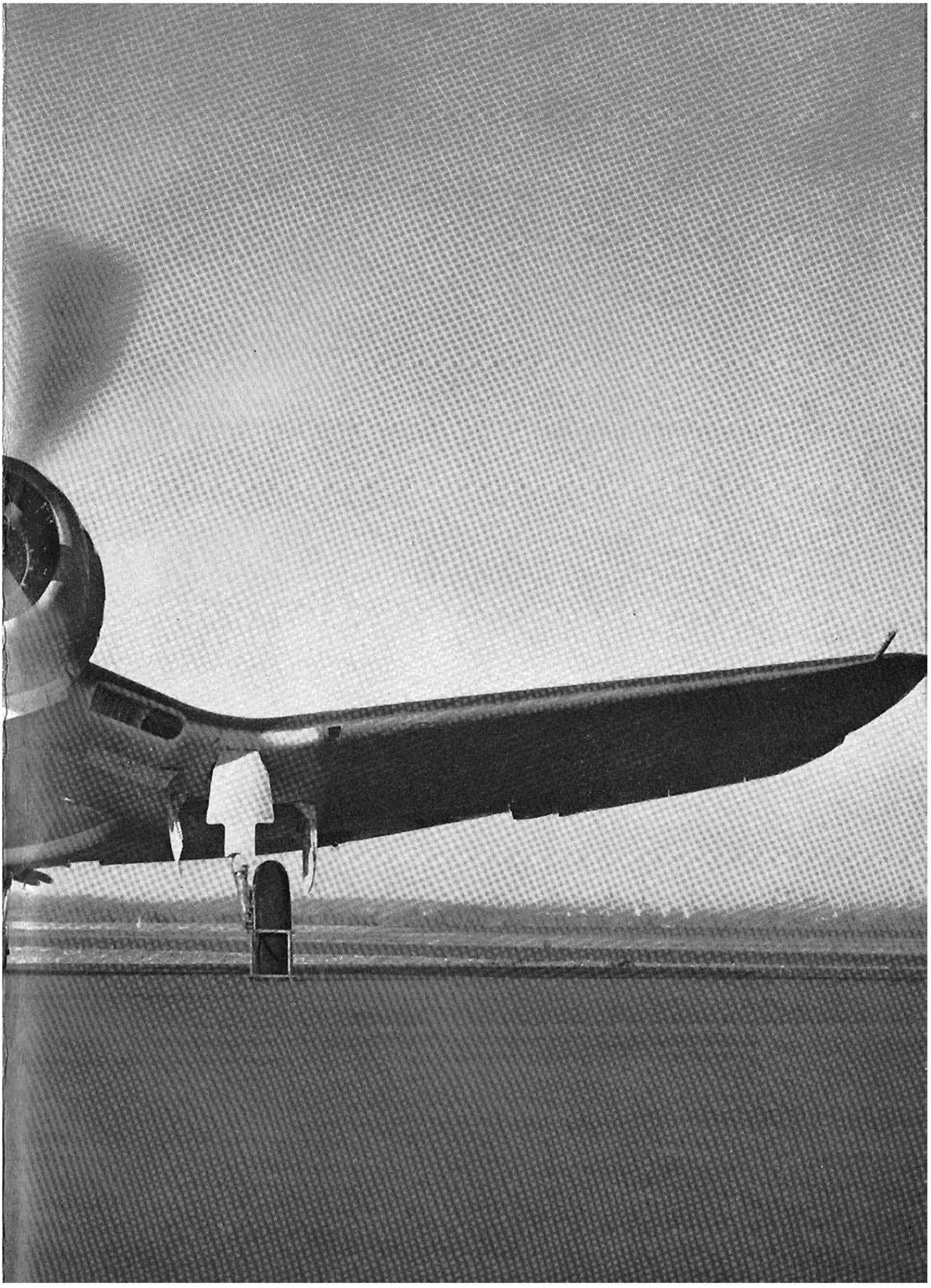
U.S. Marine Corps "Wolf Pack" Squadron used F4U Corsairs to down 86 Japanese planes.
Official U.S. Marine Corps photo

Ground men reload Corsair's guns at Guadalcanal after a raid on Jap air bases.
Official U.S. Marine Corps photo

Lt. Swett tells how he downed 7 Jap bombers in 20 minutes. Right, this Corsair came back.
Official U.S. Marine Corps photos

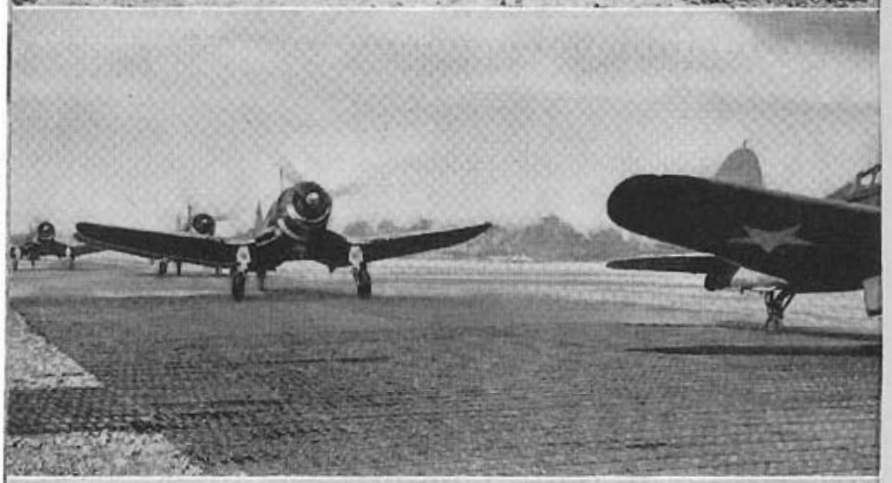
Lt. Kenneth A. Walsh, shown here in a Corsair, shot down 20 Jap planes in Solomons.
Official U.S. Marine Corps photo



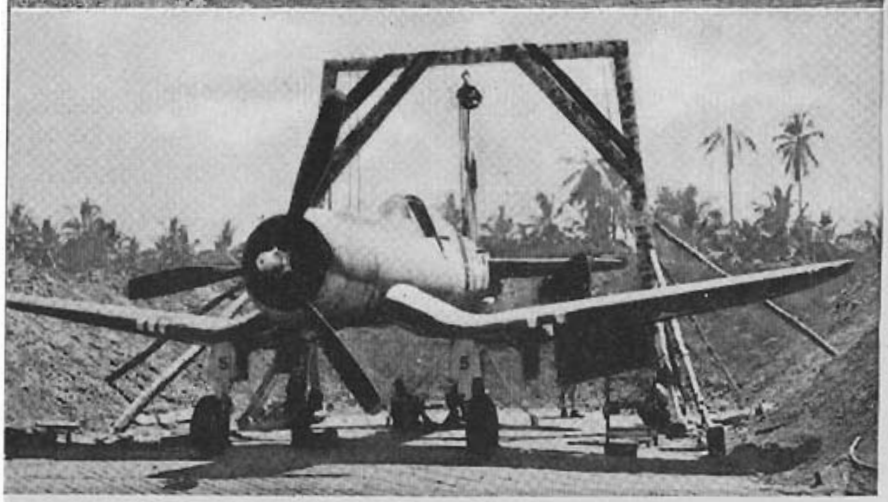


Corsairs' Wasp engines are warmed up at Henderson Field prior to a combat mission.
Official U.S. Marine Corps photo

A squadron commander, ready to lead his men into action, enters cockpit of his Corsair.
Official U.S. Marine Corps photo



Just before the take-off, Corsairs taxi along steel mat runway on Guadalcanal.
Official U.S. Marine Corps photo



Improvised hoist is used to line up Corsair gun sights somewhere in South Pacific.
Official U.S. Marine Corps photo

In the fall of 1935, Chance Vought Aircraft — which had become a division of United Aircraft Corporation as a result of a consolidation effected a few months previously — employed 980 persons.

★ THE FIRST VOUGHT MONOPLANE

WHILE DELIVERIES of the SBU-1 were being made on schedule, Chance Vought engineers and production men were rushing to completion a new scout and dive bomber — a radical departure from all previous Vought designs.

This was the XSB2U-1, an experimental low-wing airplane designed for high speeds and built to carry machine guns as well as a 1000-pound bomb and smaller bombs. Powered with a 750-horsepower Pratt & Whitney Twin Wasp Jr. engine, the plane was equipped with retractable landing gear and was the first monoplane built by Vought.

Its structure was all metal with fabric covering on the movable tail surfaces and on the after portion of the wing and fuselage.

Forerunner of the later Vindicators which were used by the Navy and Marine Corps during the early days of World War II, the XSB2U-1 received its first test flight at Rentschler Field on January 5, 1936, with Test Pilot Baker at the controls.

Chance Vought Aircraft made valuable contributions to development of the dive-bomber type. The XSB2U-1 was manufactured in quantity for the Navy under the designations SB2U-1, SB2U-2 and SB2U-3, which were used by Navy and Marine flyers as carrier-based aircraft.

The company's attention during 1937 and 1938 was concentrated largely on the manufacture of these scout dive-bombers. Production of these types was still in progress when the division was transferred from East Hartford to Stratford, Connecticut, early in 1939.

STRATFORD *plant – Present home of Chance Vought Aircraft. Occupied in 1939 – This plant has been expanded about five-fold in the last three years*

CHAPTER THREE

Stratford

WHEN THE CHANCE VOUGHT AIRCRAFT DIVISION was moved from East Hartford to a larger plant at Stratford, Conn., it joined with the Sikorsky Aircraft division to form a new organization, the Vought-Sikorsky Aircraft division. Later — in January, 1943 — the two divisions were reconstituted, with Vought assuming its former title and Sikorsky moving to a new site in Bridgeport, Conn., to concentrate on helicopter development and production.

It has been since the transfer to Stratford that Chance Vought Aircraft has made its most rapid and extensive expansion. As the international situation became more ominous, plans for successive enlargements of the plant were rushed to completion. Floor area was expanded far beyond the space formerly available, manufacturing improvements by the score were instituted and, at the outbreak of hostilities, Vought was prepared to swing its production into high gear.

This plant expansion has played a major role in Vought's maintenance of greater and greater increases in output. A few of the important developments along this line included construction of a new Final Assembly Bay, enlargement of the Engineering Department and a major increase in space and other facilities available to the Flight Test Section.

"Farming out" of the construction of sub-assemblies and other parts

of Vought airplanes through a well-integrated system of sub-contractors and vendors also contributed greatly to the continued production rise.

Within the plant, experience was proving to be an invaluable teacher as daily production problems were met and mastered by constant refinements in manufacturing technique. Close cooperation was maintained among engineers and production men so that changes – dictated by lessons learned in aerial combat – were effected with only a minimum interruption of the accelerated production schedule made necessary by the urgencies of the war.

Modern manufacturing methods, including installation of a conveyor line system, resulted in vastly improved plant efficiency. Extensive use of spot-welding – a speedy process in which Chance Vought Aircraft was a pioneer – is listed among hundreds of procedures which combined to keep Vought production on the upgrade.

★ EARLY PRODUCTION AT STRATFORD

PRODUCTION EMPHASIS when Vought came to Stratford, was on the SB2U-3 scout dive bomber, a development of the earlier SB2U-1 and SB2U-2 scout bombers designed and produced at East Hartford.

These airplanes were turned out for the U.S. Navy and were called Vindicators. Planes of substantially the same type, designated V-156, and called Chesapeakes, were built for export to the British Navy. The French government also received a quantity of Vought dive bombers before its collapse in 1940.

Vought Vindicators, flown by U. S. Marine pilots, played an important part in turning back the Japanese attempt to take Midway Island in 1942.

★ THE OS2U KINGFISHER

MEANWHILE, development was progressing on one of the most rugged and dependable Vought airplanes ever produced – the OS2U-1, which was designated the Kingfisher by the Navy. A mid-wing monoplane, it was powered with a 450-horsepower Pratt &

Whitney Wasp Jr. engine.

Hundreds of these observation scout planes as well as large numbers of the OS2U-2 and OS2U-3 models which followed, were delivered to the Navy and have established superlative records in convoy duty, submarine hunting and rescue work.

Convertible either as landplanes or seaplanes, the Kingfishers were called upon for all sorts of missions. In the initial assault against Japanese based on Attu in the Aleutians, they were rigged as dive bombers with conspicuous success. In this action they carried 335-pound bombs instead of the lighter missiles for which they were designed. They came through in characteristic Vought style.

The Kingfisher was designed specifically for catapult operation from battleships and cruisers. Previously all planes used by the Navy for this type of operation had been biplanes. The OS2U-1 was the first monoplane to be placed in catapult service. The ingenuity of Vought engineers, who developed special high lift and control devices, made this possible.

Based with the fleet, Kingfishers have ranged far and wide in the current conflict, seeing action in widely scattered war theaters. It was one of these which spotted and rescued Capt. Eddie Rickenbacker and his companions after they had virtually been given up as lost in the Pacific.

On that occasion, a Kingfisher taxied 40 miles in a rough sea, carrying besides its two-man crew, Capt. Rickenbacker and his two fellow castaways.

Operations such as this — and there were many of them — brought to light more clearly than ever this airplane's durability. Few other airplanes can rival its war-time life-span.

Some of the sturdy Vought observation scouts which survived the initial Jap assault at Pearl Harbor, are still in service today.

One of those was The Bug. Close to the hearts of a Navy scouting squadron somewhere in the Pacific, The Bug was almost a living unit of the squadron.

It was in the mid-summer of 1941 that The Bug rolled from the assembly line at the Chance Vought plant, at that time just another Navy OS2U scouting seaplane. The Navy assigned her to the U.S.S.

Pennsylvania, veteran battlewagon of the Pacific Fleet. The Bug made many a catapult take-off from that ship in the following months.

Then came December 7, 1941, a very bad day for The Bug as she shuddered at Pearl Harbor under the impact of Japanese bombs. But she lived through the beating and that night her damage was repaired. Before the dawn she was in the air, searching for the fleeing Japanese. It was an inauspicious start of a proud career.

The Bug was transferred from the Pennsylvania to another scouting squadron. For months she and her new pilot and radioman-gunner ranged the South Pacific, searching out the enemy. When American forces occupied the Ellice Islands, The Bug went along.

A few weeks later the eyes of the world focused on that area. Captain Rickenbacker was down at sea, lost with his plane-mates on a flight to the South Pacific. Days passed and still there was no word of the Rickenbacker party. The Bug searched thousands of trackless ocean miles, along with many other planes.

Then The Bug had a very good day. That day was November 11, 1942. With Lieutenant (j.g.) F. E. Woodward at the controls and L. H. Boutte, Aviation Radioman First Class, in the back seat, The Bug spied a spot of yellow on the rolling blue swells. Woodward set The Bug down on the water and taxied over to the yellow spot. It was a liferaft. In the raft was Captain W. T. Cherry, pilot of the ill-starred Rickenbacker plane. Captain Cherry was taken aboard and flown to safety.

Then The Bug had its very best day. The raft with Captain Rickenbacker aboard was spotted just before nightfall, November 12, 1942. Volunteers to try to effect an immediate rescue were sought. Lieutenant (now Lieutenant Commander) William F. Eadie won the assignment and at the controls of The Bug flew to the other spot of yellow. Landing and taxying alongside, Lieutenant Eadie looked down into the smiling face of Captain Rickenbacker and two of his companions.

The most seriously-ill member of the trio was placed in the back seat with Radioman Boutte – and Rickenbacker and the other member were lashed to the wings. Thus, Lieutenant Eadie taxied toward the nearest base, a hazardous undertaking that called for a plane that could take a beating from the sea.

The Bug with two hectic war years behind her, with 1,100 hours in the air, with more than a quarter of a million miles on her log, flew on. Like her sister Kingfishers, she seems indestructible.

★ THE F4U-1 CORSAIR

ALTHOUGH THEIR IMMEDIATE PROBLEMS concerned the scout bombers and observation scouts, Vought engineers were looking into the future, preparing for the day when America's aerial forces would need a super-fighter.

It wasn't long before they came up with one of the world's truly great fighter planes — the XF4U-1, since named the Corsair and placed in mass production as the F4U-1.

Installed in the blunt nose of this gull-winged terror was a 2,000-horsepower Pratt & Whitney Double Wasp engine with a two-stage supercharger, most potent powerplant ever placed in a fighter plane. The XF4U-1 was a sensation. It bored through the air at better than 400 miles an hour in tests.

Hundreds were ordered and the first production F4U-1 rolled from the Vought assembly line late in June, 1942. Thus was marked the successful completion of the difficult task of placing in production a new and complicated airplane and at the same time maintaining rapid output of the Kingfisher series. Ahead lay the tremendous job of speeding up production week by week and month by month to keep pace with the tough, accelerated schedule called for by the Navy.

Designed specifically for operation by the Navy as a carrier-based fighter, the Corsair combined the engineering and manufacturing skill of three divisions of the United Aircraft Corporation — Chance Vought Aircraft, Pratt & Whitney Aircraft and Hamilton Standard Propellers.

Built around the big air-cooled Double Wasp engine, the Corsair not only was the U.S. Navy's first 2,000-horsepower fighter, it was also the first Navy fighter in the world with such horsepower. Performances of the airplane in its combat engagements justified again the Navy's traditional faith in air-cooled power plants as well as its confidence in the novel design features incorporated in the Corsair.

The Corsair was of rugged construction throughout to carry its powerful engine and to withstand the grueling punishment of carrier landings. It was large as fighter planes go, having a span of just under 41 feet, a length of more than 33 feet, and a tremendous three-bladed Hydromatic propeller swinging through an arc 13 feet 4 inches in diameter.

Conceived and developed by the Vought Engineering Staff under the direction of Rex B. Beisel, a veteran aeronautical engineer of more than a quarter century's experience, the Corsair has aroused tremendous interest ever since the original experimental model first demonstrated its potentialities to the Navy.

Observers were quick to agree, on the results of flight tests, that the craft was fully capable of writing a new and significant chapter in fighter plane history. Months before the plane appeared in combat areas, Rear Admiral John H. Towers, then Chief of the Bureau of Aeronautics and now in command of all aircraft in the Pacific, described the Corsair as the fastest airplane in the United States.

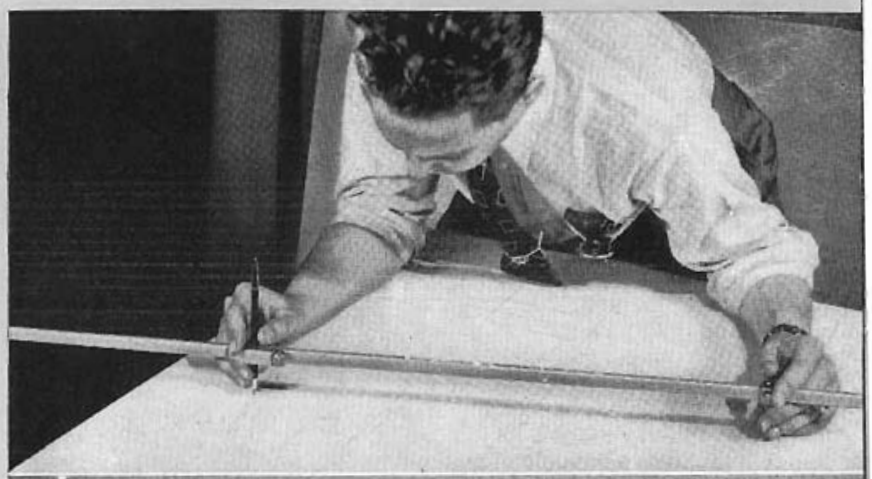
Navy pilots, speaking "off the record", praised the Corsair's performance and eagerly awaited the day when it would be ready to strike in force at the enemy, particularly against the vaunted Japanese Zero.

★ SPEED WAS THE SPUR

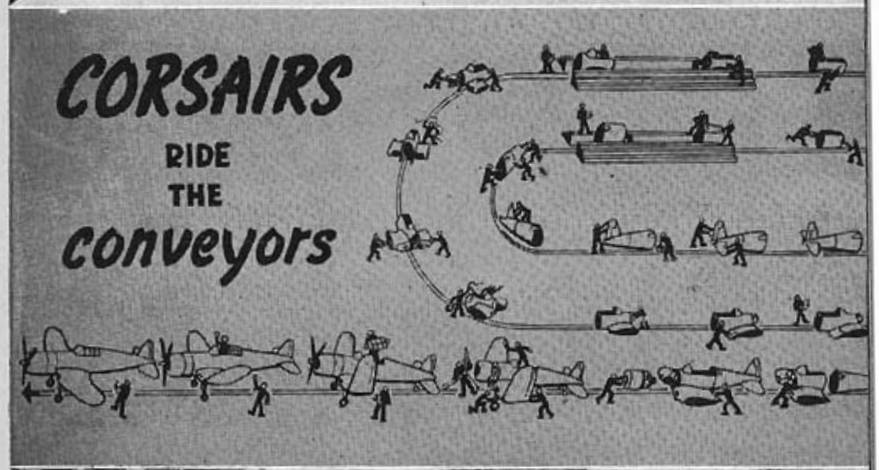
VOUGHT ENGINEERS, describing the evolution of the Corsair, emphasized that the Navy gave them three requirements: 1 — Speed; 2 — Speed; and 3 — More Speed. To this end they designed the smallest fuselage possible around the Double Wasp engine, having as their ultimate purpose the construction of the cleanest possible airplane, with elimination of everything which would cause drag.

Achievement of this aim inspired for the first time the use of spot-welding and flush-riveting throughout the aircraft. Air-scoops and other protuberances were taboo; the landing gear, tail wheel and arresting gear were not only retractable but completely faired in when in the "up" position.

One of the first problems encountered resulted from the designers'

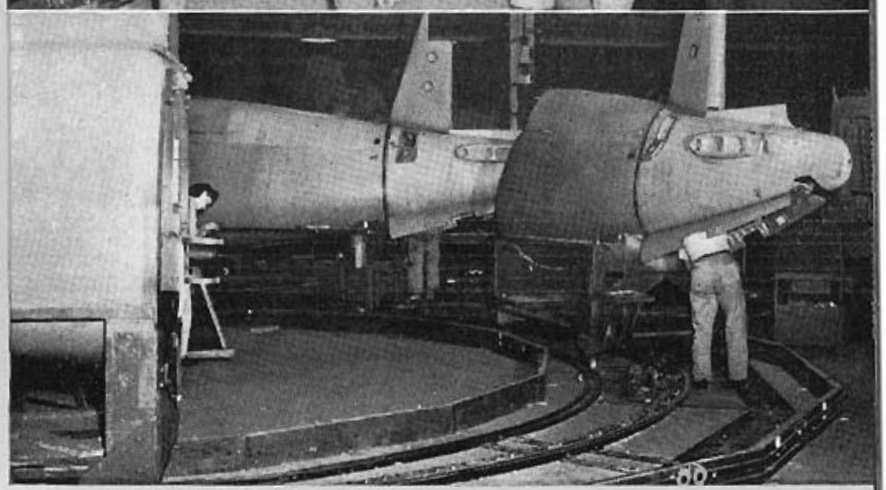


Engineering genius gives the Corsair its clean lines, superb combat performance.

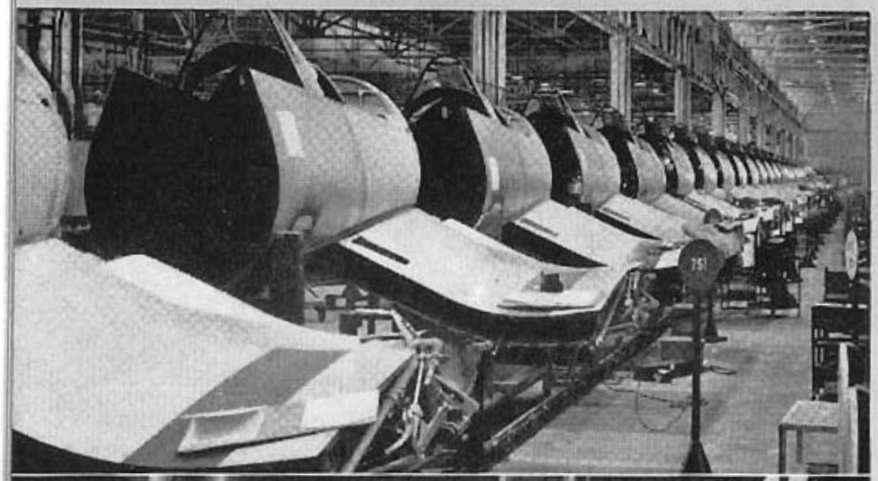


This greatly simplified diagram shows assembly of Corsairs on conveyor lines.

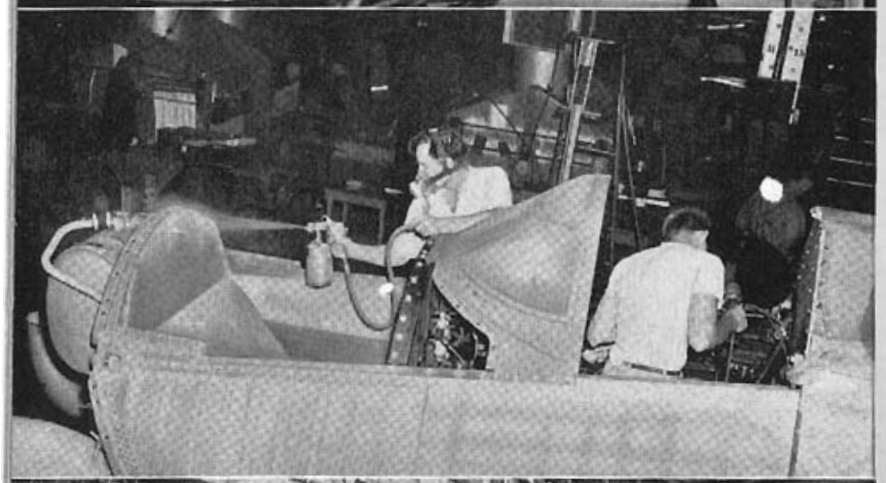
Men and women in wing shop work together on partially-completed center section.



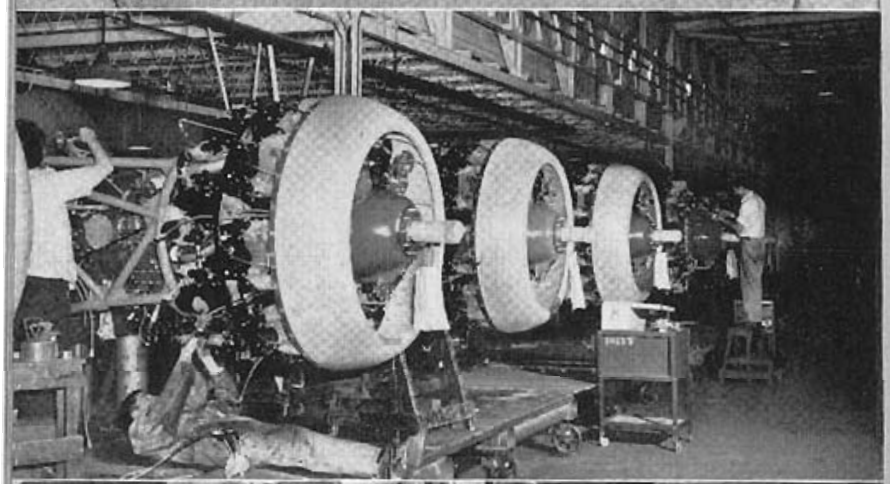
A curve marks midpoint in fuselage line; here mid and aft sections have been joined.



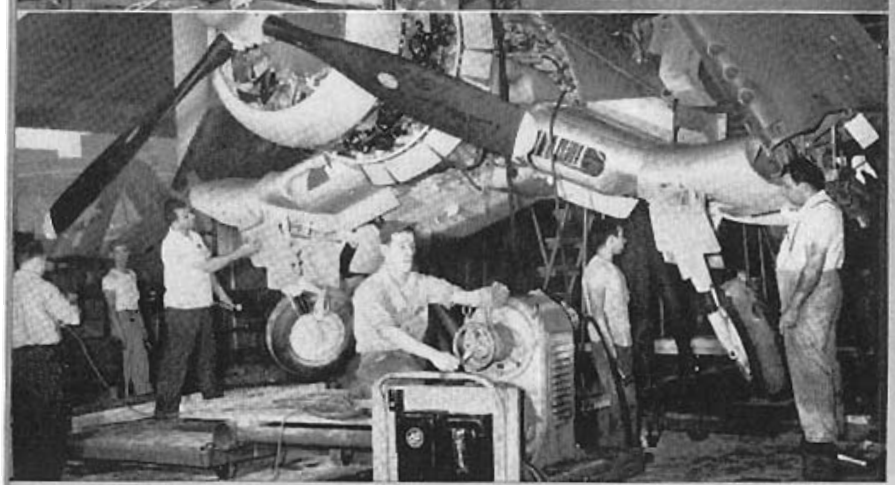
The start of final assembly: Installations are added as front sections move along.



Spraying and inspection are among many operations performed in final assembly.

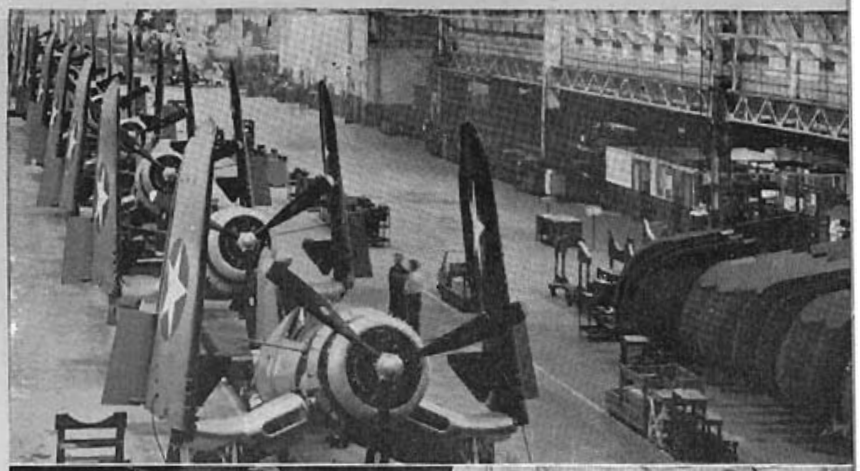


Corsair power plants, big Double Wasp engines, are prepared for installation.



Landing gear is retracted as workers carefully check Corsair's hydraulic system.

Inspection and finishing touches remain as Corsairs near the end of the line.



Women add engine fittings and, right, the Corsair goes into the paint shop.

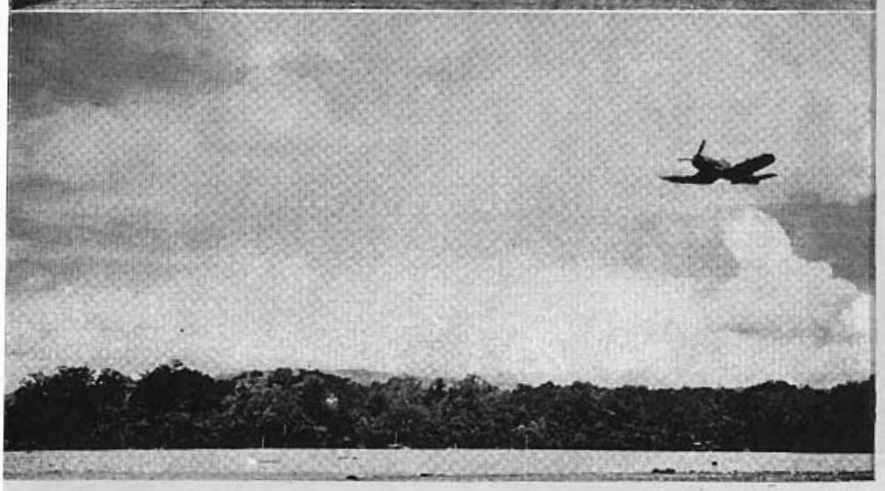
Crossing gates are lowered and new Corsair is towed to airport for flight test.

The test pilots take over: Here, three of the staff are assigned to planes.

Test-flown and accepted, these Corsairs are ready for delivery to the Navy.

Long-range, new Corsairs are flown from the plant to various dispersal points.
Official U.S. Navy photo

Their destination at last; Corsairs are shown here lined up on Guadalcanal.
Official U.S. Marine Corps photo



Back from a combat mission, a Marine Corps pilot "buzzes" Henderson Field at 400 m.p.h.
Official U.S. Marine Corps photo

decision to make use of the largest possible propeller — a decision which was reached when it was realized that only a large propeller would enable the combination of powerful engine and cleanly designed plane to attain the high speed desired.

Investigation of methods of obtaining sufficient ground clearance for the large propeller resulted in the conception by Beisel of the inverted gull-wing, a design feature which simultaneously solved other problems as well.

The gull-wing made possible the use of a shorter, lighter landing gear than would have been possible on a straight-wing airplane and enabled the gear to fold readily aft within the width of wing available. An ingenious device shortened the landing gear, thus making it possible to house the gear in the limited available space.

★ GULL-WING PAYS DIVIDENDS

ANOTHER, AND IMPORTANT REASON for the inverted gull-wing, was an aerodynamic one. Experiments had shown that the most efficient relative position of the wing to the fuselage was the "normal," or right angle attachment, the reason being that such a position offers the minimum interference drag between wing and fuselage. Thus a wing placed midway between the top and bottom of the fuselage would result in less drag than if located at either top or bottom. Use of the gull-wing maintained the right angle intersection of the fuselage-wing attachment, the angle being the same as in the case of the mid-wing method, yet retained the obvious advantage made possible by the use of the extra-large propeller.

Additional advantages stemming from the gull-wing were improved vision for the pilot because of the low wing points on either side of the fuselage, and a lower overall height with the wings folded due to the low junction point of the center and outer wing panels, thus facilitating storage in under-deck hangars aboard carriers.

The fact that the Corsair was one of the fastest airplanes in the world and yet would land in the limited space of a carrier, stamped it as one of the most remarkable fighter planes ever built. Its performance showed it to be a formidable weapon from sea level to ex-

tremely high altitudes, making practical its use as an interceptor, a medium altitude or high altitude fighter. This meant that the Corsair possessed noteworthy performance characteristics at altitudes ranging all the way from sea level to well over thirty thousand feet.

The Corsair proved its ability to outfight and outfly land-based aircraft, an unusual accomplishment for an airplane designed specifically for operation from an aircraft carrier. Its novel design features offset the additional weight imposed by the use of such devices as arresting gear, folding wing equipment and the extra built-in strength to enable the plane to withstand the shocks of carrier landings.

In combat, the Corsair has fully vindicated the faith of its designer and its Navy sponsors. Its rare combination of speed, climb, altitude, range, maneuverability, firepower and ruggedness has made it an outstanding airplane — playing a leading role in smashing Axis aerial strength and speeding the day of Victory.

★ CORSAIRS IN COMBAT

CORSAIRS RECEIVED their baptism of fire in the Solomon Islands area early in 1943 and the excellent reports which filtered back spurred Vought employees to even greater efforts.

Executives, engineers, and the men and women on the machines all took a new pride in their work when news was flashed that the Corsairs had lived up to advance notices — had proven themselves in battle.

With young Marine pilots at the controls, the fast, rugged Corsairs took the measure of the best the enemy could put forth — and consistently came out on top. Reports were received of spectacular engagements in which Corsair pilots broke up Japanese bombing raids, blasting enemy craft from the sky with only minor losses to themselves. Once a little band of four Corsairs returning from a strafing run attacked 40 Japanese bombers and escorting fighters, scattering them and turning back the enemy raid.

Pilots added their voices to the story their chattering guns were writing in the Solomons skies. "The Corsairs are better than anything either we or the enemy have — from every angle," said squadron

leader Major Robert S. Fraser after the new F4U-1's had shot down 15 of 25 Jap Zeros in a series of running dogfights. "It's the best damned fighter in the world," asserted the pilot of an American torpedo bomber who had been saved when a Corsair "picked two Zeros right off my tail."

Added to the stories of the men who flew the Corsairs came praise from high Naval officials.

"Day to day fighting in the South Pacific has proven the Corsair decidedly superior to all models of the Jap Zero," said Admiral Chester W. Nimitz in a telegram to Chance Vought employees in May, 1943. "Our Naval and Marine pilots at Guadalcanal are enthusiastic about this plane which so regularly turns out a first-rate job. Congratulations to all Chance Vought personnel on this outstanding contribution to the war effort. The Navy needs many more planes to constantly increase the pressure on the enemy. Keep the Corsairs coming."

Vice Admiral John S. McCain, then Chief of the Bureau of Aeronautics, gave combat details in a telegram "to the men and women of Chance Vought Aircraft":

"The superior fighting qualities of your F4U-1 Corsair were recently demonstrated in convincing fashion in aerial combat in the Russell Islands area," he said. "In this action seven F4U's and six P-38's were part of 29 Army, Navy, and Marine planes engaging from 25 to 35 Jap planes. In this fight the Corsairs accounted for four enemy planes while one F4U was shot down. The combat report of the action indicates that the Corsairs displayed greater speed and firepower, more effective armor and better diving performance than the Zeros. The report adds that the Corsair responded to every demand made upon it and fully substantiated the most optimistic claims made for it as a fighter plane. In a later engagement our fighter planes encountered about 25 Zeros in the same area. Of these, Corsair fighter planes accounted for 15. Five of our planes were lost in this action.

"In behalf of the Navy Department, I wish to extend thanks to all of you at Chance Vought for your splendid contribution to the striking power of our Naval air arm."

the run on the second Zero, another Zero came in on my right and shot out the right aileron, which threw my plane out of control."

Lieutenant Vedder had to bail out into the Pacific, but was rescued.

First Lieutenant Milton E. Peck, Vicksburg, Mississippi, also knocked down a Zero before the Japanese craft fled.

A typical strafing mission was carried out in Corsairs when Major Gregory Weissenberger, master of these tactics, led an attack on Japanese airfields at Vila and Munda.

At Vila, the Marines approached their target at several hundred feet. The Japanese were taken completely by surprise. Soaring in at tree-top level, the Corsairs swooped down the runway, strafing everything in sight. At Munda, they repeated, setting a truck, two airplanes and fuel dump afire. The Japs opened up with all types of anti-aircraft fire to no avail.

Second Lieutenant George C. De Fabio, Cleveland Heights, Ohio, had a close call. Anti-aircraft fire took away 46 inches from his wingtip, but the rugged Corsair made the return flight.

★ MANY CORSAIR ACES

ONE OF THE LEADING American aces of World War II, First Lieut. Kenneth A. Walsh, 28-year-old Marine Corps pilot of Washington, D. C., who shot down 20 Japanese planes in the Solomons, accounted for every one of his victims while flying a Corsair. In his first combat with the enemy Lieut. Walsh used Corsair speed to advantage. A Jap Zero tried to escape his fire by a tight loop. Corsair speed enabled Lieut. Walsh to loop outside his enemy, finish on top and shoot the Zero down.

Another Marine Corsair pilot, Major Gregory Boyington, has also shot down 20 Jap aircraft.

Walsh's squadron, VMF-124—first to go into action with the Corsairs — blasted a total of 68 Japanese aircraft from the Solomons skies while losing three of its own pilots. Other squadrons flying Corsairs ran up similar one-sided scores over Nipponese airmen, one of these being the Wolf Pack squadron which shot down 86 enemy aircraft.

"I'd attribute our low loss rate to the ruggedness and speed of the

Corsair, itself," Lieut. Walsh said upon his return to the United States.

Latest accounts report that 11 more Corsair pilots have become aces — have shot down five or more enemy planes — in World War II.

★ THE TORPEDO BOMBER

ALTHOUGH THE CORSAIR was their immediate and most pressing problem, Vought engineers, during 1941 and 1942, designed and developed still another formidable airplane — a powerful torpedo bomber designed to increase the striking power of the U. S. Navy.

The new craft was kept on the Navy's secret list for many months. Extensive test-flying of the prototype — the XTBU-1 — was conducted by Vought test pilots and production of the craft was started before the Navy released any information about it.

Because Chance Vought's manufacturing facilities were taxed to the utmost by the Corsair program, it was decided to call upon an outside manufacturer — the Consolidated-Vultee Aircraft Corporation — to build the new airplane.

The new craft incorporated all that experience had taught about the use of torpedo bombers. It carried a crew of three—a pilot, gunner, and radioman-gunner. It was powerfully armed with guns to defend itself and was also well-armored. Its striking power included either a full-sized torpedo, or a heavy load of bombs.

When it was placed in production in September, 1943, at the Consolidated-Vultee plant at Allentown, Pennsylvania, it was designated the TBY-1 and called the Sea Wolf, a name chosen by Vought employees.

Rear Admiral Ralph E. Davison, then Assistant Chief of the Bureau of Aeronautics, was the first to lift — at least partially — the veil of secrecy surrounding the Sea Wolf. At dedication of an airport at Allentown, he told Consolidated Vultee employees that the new airplane was "the last word" in its line.

"The performance of the Sea Wolf, its range, speed and ability to climb to operating altitude, I cannot, of course, discuss in detail," he said. "Suffice to say that there is not another torpedo plane in the world today to match it."

★ PLANT EXPANSION

EXPANSION of the Chance Vought Aircraft division's manufacturing facilities during the four-year period starting in 1939 dwarfed any program of enlargement ever before undertaken by the company.

New construction, totaling millions of dollars and involving various types of structures from small storage sheds to towering hangars of the most modern design, boosted the plant's total floor area to a figure more than five times what it was prior to 1939.

In chronological order were constructed a main factory addition, a hammer shop and foundry, an engineering and drafting building, a deflector building, two hammer shop and foundry additions, a main factory, an assembly hangar, an engineering drafting building addition, a storage building, a tool and maintenance building, another administration building addition, a shipping building, a paint storage building, two garage buildings, an engineering experimental building, another addition to the main factory, an office building, an engineering annex, a test hangar, a tool engineering building, an addition to the engineering annex, another test hangar, and another office building.

Several outside leased areas, including five in Bridgeport and two in Stratford, had a total floor area in excess of that of the main plant as it existed in 1939.

As the division's floor space mushroomed rapidly, its personnel total increased in even greater proportion. Between 1939 and 1943 the number of employees had increased more than 13-fold.

The effects of such a rapid and extensive expansion were tremendous. New problems presented themselves by the hundreds as the plant grew from a comparatively small manufacturing unit into what to all purposes was a fair-sized community.

In order to meet and solve these multiple problems, new departments were created. Experts in fields previously alien to the aircraft industry were brought in to supervise the new activities.

Organization of the company was complex. There were 14 separate major units, each with its numerous sub-divisions, all with a common purpose – the production of more and more fighter airplanes for the Navy.

★ THE ARMY-NAVY "E"

CHANCE VOUGHT AIRCRAFT'S OUTSTANDING PRODUCTION accomplishments received official recognition in November, 1943 when the company was awarded the Army-Navy "E".

Many factors contributed to the attainment of the consistently high rate of output required for the winning of such an award. Among the most important was maintenance of friendly, cooperative relations between management and labor. This factor assumed greater and greater importance as plant personnel increased. Numerous complications developed, but rapid expansion of the plant Personnel department made it possible to solve these problems as they appeared.

The fact that experienced employees were entering the armed services and were being replaced by women who had never previously operated anything more complicated than a vacuum cleaner, added to the problem.

However, the women, who took men's places by the hundreds, came through in excellent style, and Chance Vought Aircraft's steady increase in output stood as shining testimonial to the value of their contribution to the nation's war effort.

Chance Vought Aircraft did not win the Army-Navy "E" easily and for that reason prizes it highly now that it has been attained. The transition from the Kingfisher observation-scout — which type Vought was building when the Japs struck at Pearl Harbor — to the Corsair, a larger and radically different type of airplane, was not an overnight job. It required all the engineering and manufacturing genius which Vought was able to muster. Once the changeover was accomplished, however, Vought threw all its energies into the all-important task of reaching a high rate of production on the Corsair.

To get production on the upgrade and keep it there, Vought was called upon not only to increase its own personnel and train these new workers by the thousands, but also to set up a vast network of subcontractors and vendors upon whose efforts depended the success or failure of the struggle to give the Navy more and more Corsairs.

The complexities involved in bringing about efficient coordination of the efforts of subcontractors situated in many parts of the country

at great distances from the home plant in Stratford were enormous. In order to achieve the production rate required by the needs of the armed services, it was necessary that thousands of sub-assemblies and detailed parts flow into the plant day in and day out in proper sequence and quantity. A slip-up anywhere along the line could well upset the entire schedule and seriously hinder output.

Thus, Chance Vought Aircraft and its subcontractors became in effect a huge organization of many thousand employees, all striving to coordinate their activities toward the common goal – increased output of what everyone of them was proud to call the fastest Navy plane ever built and the finest fighter in the world.

Rex B. Beisel
General Manager of Chance Vought Aircraft. A veteran aeronautical engineer, with many years' experience in designing and manufacturing airplanes.

George Franko
Oldest employee in line of service. 25 years with Chance Vought Aircraft, he is now chief inspector for the plant.