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WARPLANE RESEARCH

GROUP II—No. 5B

MARTIN B-26
"Marauder"

A detailed analysis of this famous warplane, containing complete drawings, photographs and technical data



AIR AGE INC., 551 5th AVE., NEW YORK 17, N. Y.

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Martin XB-26

MANUFACTURER: The Glen L. Martin Co., Baltimore, Maryland.
ARMY AIR FORCES.....B-26
POPULAR NAME.....*Marauder*
CHIEF DESIGNER....William K. Ebel
CHIEF TEST PILOT..William K. Ebel

History

WHEN we read of the terrific attacks by Martin *Marauder* bombers, hitting the enemy on every war front, it is difficult to believe that the designer of this potent weapon once rattled crazily aloft in a skittering crate which he had designed and built himself in 1909! Glen Martin was flying his own airplane just seven days after Bleriot had crossed the English Channel; and *before:* Eugene Ely had landed on and taken off a ship, Curtiss had taken off in a seaplane, Orville Wright had remained aloft for one hour, Lincoln Beachey had flown over Niagara Falls and Roland Garros had established a world's altitude record!

Glenn Luther was born in Macksburg, Iowa, on January 17th, 1886, the son of C. Y. Martin, a hardware merchant. Two years later the family moved to Liberal, Kansas, in search of better business conditions. In 1892, at the tender age of 6, Glenn built his first original kite design, a biplane affair which immediately became the envy of his fellow "fliers." Aware of the tremendous possibilities of this emotion Martin started his first aircraft production line: biplane kites at 25c a copy! In 1895 Martin, Sr., moved again in quest of business profits, this time to Salina, Kansas, where Glenn worked in a bicycle shop after school.

With the advent of the automobile, Martin shifted to David Methven's Garage and his mechanical aptitude soon made him a top notch automobile engine man. His knowledge of the internal combustion engine, experimental as it was in those days, convinced him of the future possibility of the type and he quickly acquired a profound respect for Henry Ford and his amazing motors.

Martin entered Kansas Wesleyan University where he studied business economics, the rudiments of which brought him safely through the years to come with his own private, personal company intact. Without such business acumen, Martin's firm may long since have been bankrupt, merged or absorbed into any of dozens of different combines which obliterated the names of so many pioneers in the hectic aviation business.

One day in 1905 Glenn Martin picked up the Salina newspaper to read the startling news that the Wrights had remained aloft for 1 minute 40 seconds, and for the first time man had made a real flight—not just a hop. At 19, Martin quickly compared his successful biplane kites with the Wright airplane and confided to his mother, who is today still right by his side, "It's just like my kite, only with propellers to push it!" Martin had, with that statement, made a decision that has not been changed: he could build a successful airplane.

During the year, Martin, Sr., accepted a position with a hardware firm in Santa Ana, California, a tiny village 40 miles southeast of Los Angeles, itself only a small town at the time. Glenn immediately found a job with a local garage and after a short time launched his first business enterprise: Glenn L. Martin, dealer in Ford and Maxwell automobiles! His firm was a distinct success and with-

in a year Martin showed a $4,000 profit, quite a lot of money for a young man to make in 1906.

In his spare time he built larger and larger models of his biplane kites until he soon had a man-carrying glider. Early mornings found him racing over the hills and gulleys of the countryside near Santa Ana. He spent 1907 in such experiments, and early in 1908 he began construction of a full size airplane. The Southern Methodist Church moved into a large new church building, leaving its tiny former site. Martin rented the abandoned church and went there every evening, often with his mother, to make ribs and glue fittings. On blocks in a corner stood a 4-cylinder Ford engine capable of a full 12 hp; and nearby was a hand-carved propeller.

Months elapsed during which the weird contraption took shape, muslin was applied to the wings and they in turn installed on the main frame with the flying wires in place. The engine was mounted and the plane finished during July 1909. For fear of arousing a disturbance, Martin towed his airplane from the church during the night to a pasture on the outskirts. At the crack of dawn on August 1, 1909 Martin started the engine, raced across the field and left the ground. He flew in a plane of his own design and construction—without ever having seen an airplane!

That first hop was only just that, covering little more than a hundred feet—but Martin was in no hurry. Future hops became longer and longer, finally clearing the fence at the far edge of the field. Although he had lightened the Ford engine by fitting a copper crankcase, it became evident that more power was needed regardless of weight, so he installed a 30 hp Eldredge marine engine. With this great power he was soon actually flying several hundred feet in the air and executing various cautious maneuvers.

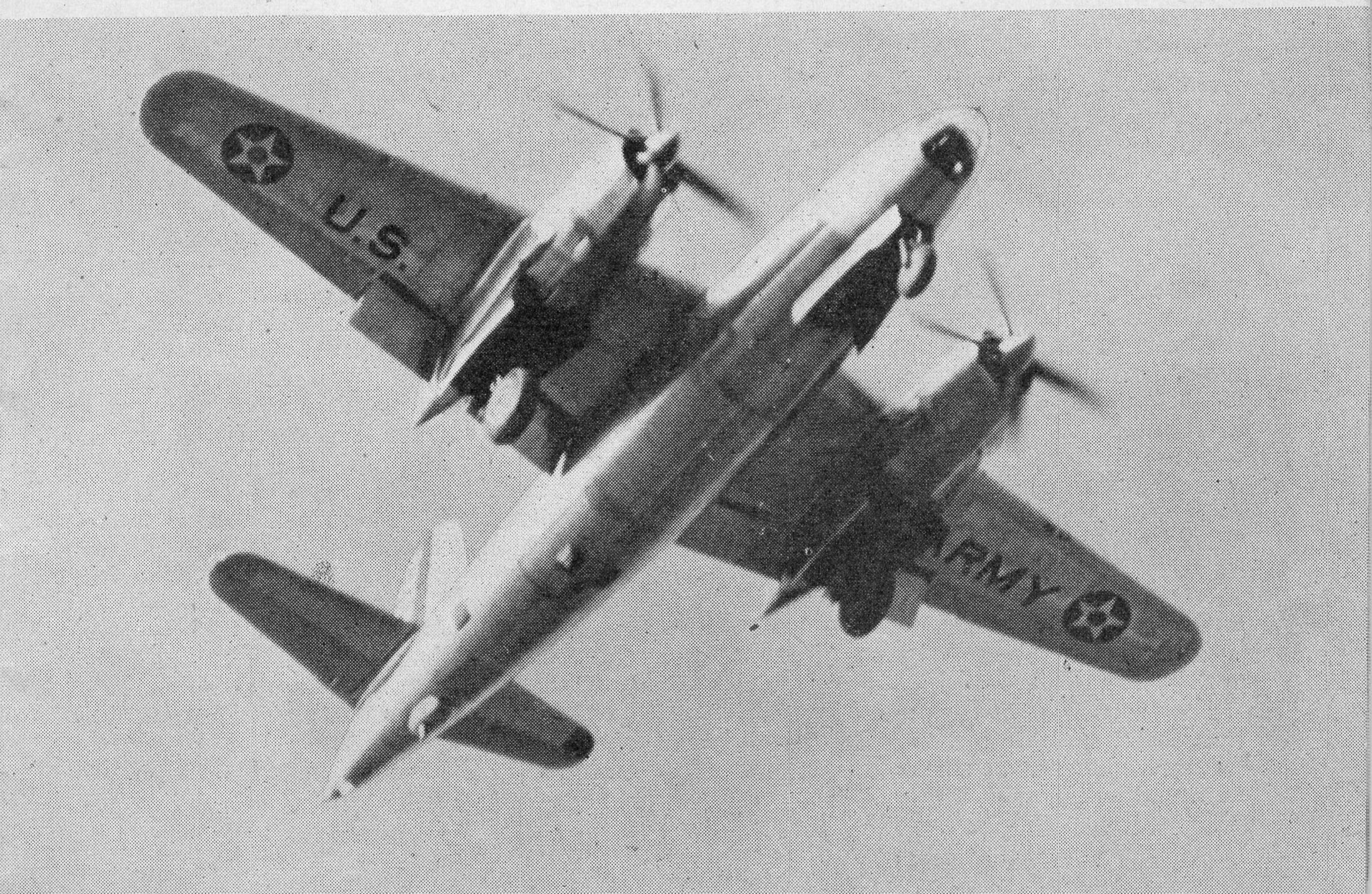
Always the business man, Martin began early to realize some return on his $3,000 investment by taking passengers for rides. Soon the curious were driving all the way from Los Angeles to see this amazing young man and his flying machine, and the daredevils in the crowd boisterously hopped on the wing as the

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MARTIN XB-26

Two Pratt & Whitney "Double Wasp" R-2800-5

Span	65 ft. 0 in.
Length	58 ft. 2½ in.
Height	20 ft. 0 in.
Wing Area	525 sq. ft.
Gross Weight	24,500 lbs.
Power (2600 rpm @ 7,500 ft.)	1,850 hp
Armament	Four .30 cal. m.g.
Wing Loading	46.70
Power Loading	6.62
Speed (max. @ 12,000 ft.)	360 mph
Ceiling (service)	30,000 ft.

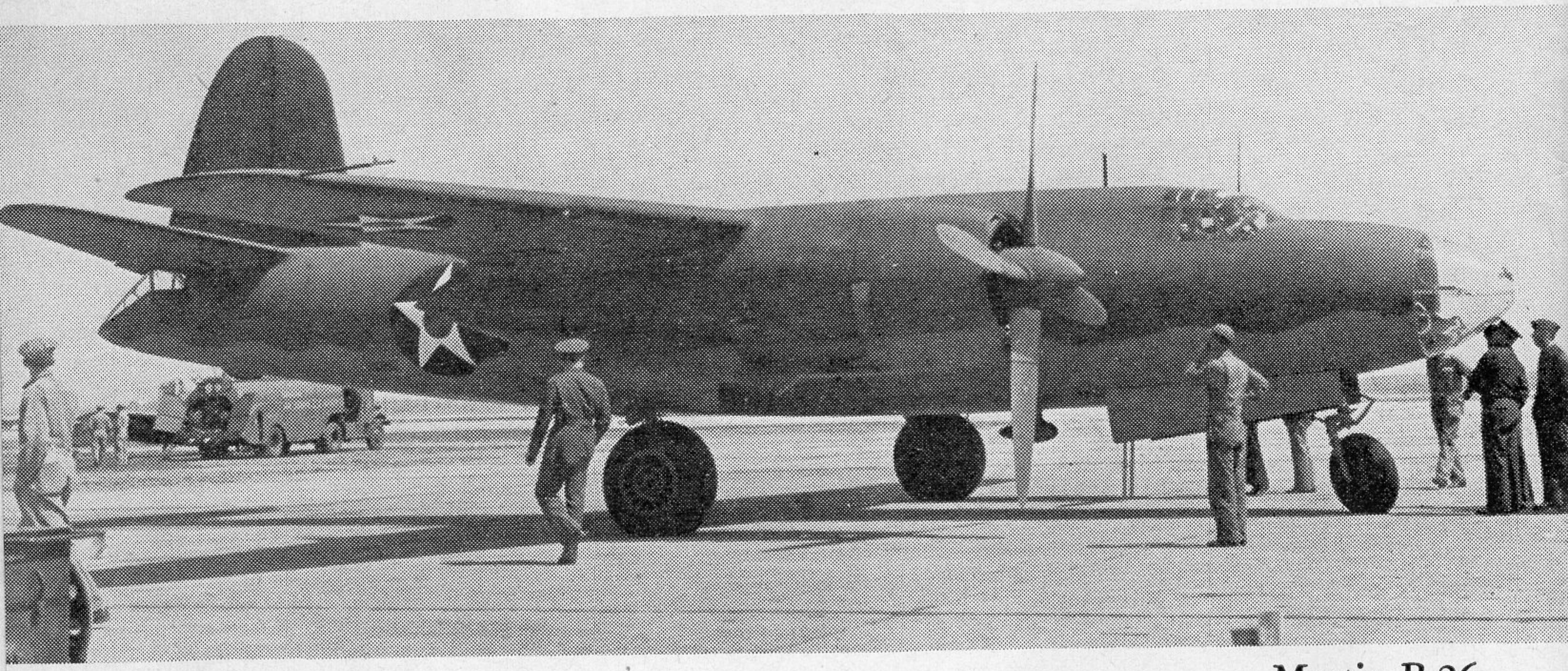


24 year old "wild-eyed, hallucinated, visionary" (sic) young man collected the fares and made the customary circuit of the pasture.

The little church was quickly outgrown and Martin rented an abandoned Santa Ana cannery in which to build more planes. The Glenn L. Martin Co. was launched on a career that was destined to carry it through more than three decades of success. While other aviators were doing exhibition stunts and gaining fame as daredevils, Martin was seriously attempting to make aviation a paying business. Passenger hops in the Los Angeles area began to jingle the till and he received $2,000 for carrying a message from the Mayor of San Francisco to the Mayor of Oakland across the Bay. A barnstorming trip through Texas, Kansas and Iowa brought him $12,000. Soon, aviation

in 1913 as its first trainer-bomber. Flying the plane himself, Martin conducted the Army's first bombing experiments on North Island, San Diego, California, during the year. One version of the TT was fitted with thin sheets of armor plate along its sides and was delivered to the Army late in 1913, the first armor plate airplane. Still another version was to be recorded as America's first multi-passenger airplane when Martin placed a seat beside the two regular seats, making a total of four in all. The plane was produced for the firm of Gorat and King to fly passengers across Coos Bay in Washington, and giant headlines screamed the news that the "airliner" had been born, which indeed it had.

On January 10, 1914 Martin soared aloft with "Tiny" Broadwick, famous girl trapeze and stunt artist, as passenger. On



Martin B-26

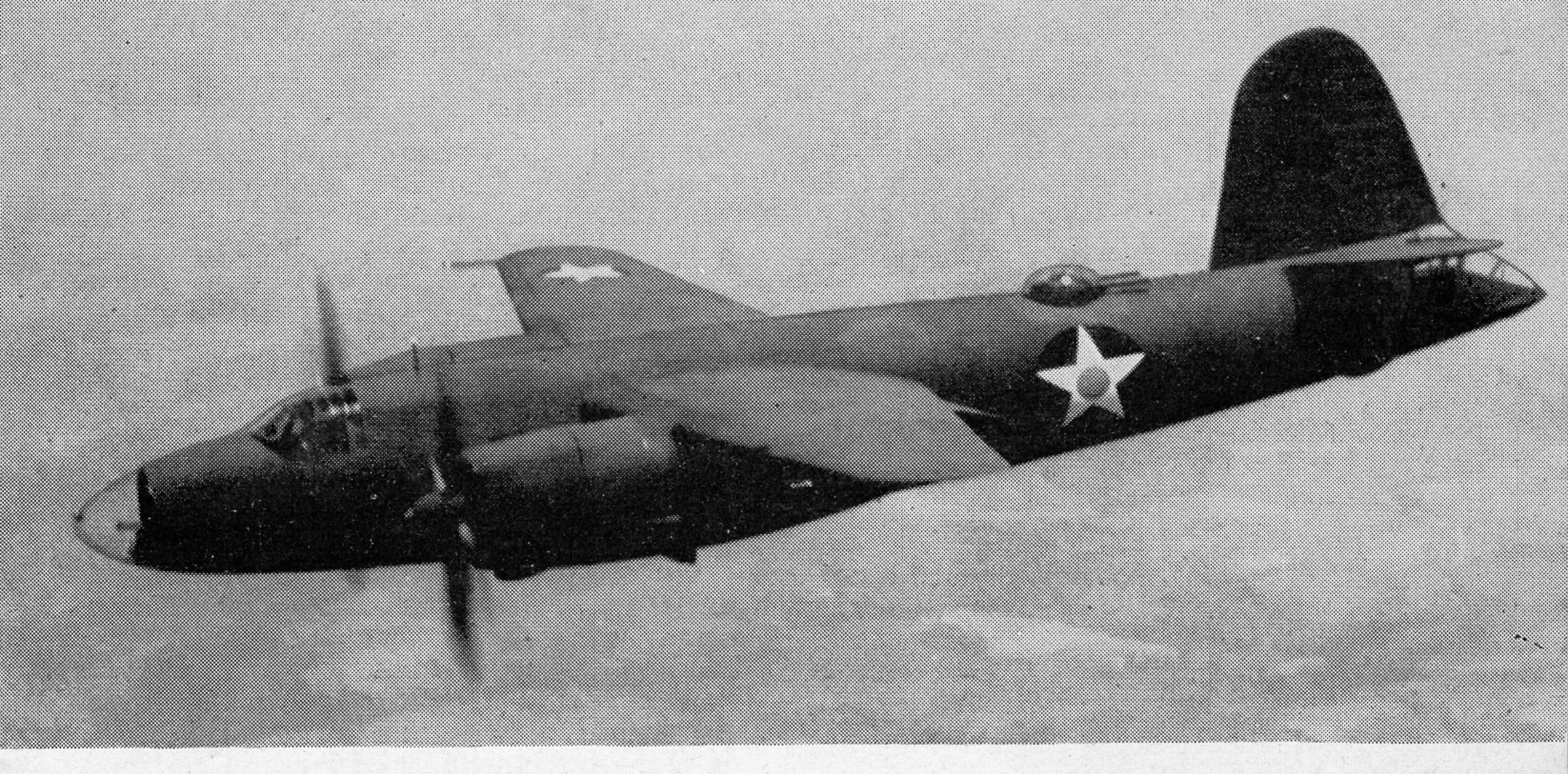
became a paying business for Glenn L. Martin and he moved his "factory" to Los Angeles. Hollywood brought him many screen stars as passengers and he too became a star, playing opposite Mary Pickford in *The Girl of Yesterday*. His serious piloting technique brought him one of aviation's historic honors: Expert Pilot License No. 2 from the Aero Club of America. It was on May 10, 1912 that Martin's name smashed the headlines and his fame was securely established, for on that day he flew from Newport Bay to Catalina Island and back, a distance of nearly 60 miles!

The first Martin production machine was the model TT, an amazingly modern tractor biplane that was sold to the Army

her back was strapped a strange new device perfected by Martin and Floyd Smith, one of his factory employees. At 3,000 feet the slim girl plummeted over the side and floated to safety, and another era in aviation was harbingered by Glenn L. Martin.

War clouds threatened and then broke in a storm during August 1914 and Martin's Los Angeles factory was swamped with orders. Four months previously he had taken to the air in another aerial innovation—an airplane armed with a gun! The weapon was only a Winchester rifle mounted in the nose of a special pusher design but it was the forerunner of the modern fighter plane.

Late in 1914 the Netherlands East Indies



MARTIN B-26

Two Pratt & Whitney "Double Wasp" R-2800-5

Span	**65 ft. 0 in.**
Length	**58 ft. 2½ in.**
Height	**20 ft. 0 in.**
Wing Area	**525 sq. ft.**
Gross Weight	**24,700 lbs.**
Power (2600 rpm @ 7,500 ft.)	**1,850 hp**
Armament	**Four .30 cal. m.g.**
Wing Loading	**47.10**
Power Loading	**6.68**
Speed (max. @ 12,000 ft.)	**360 mph**
Ceiling (service)	**30,000 ft.**

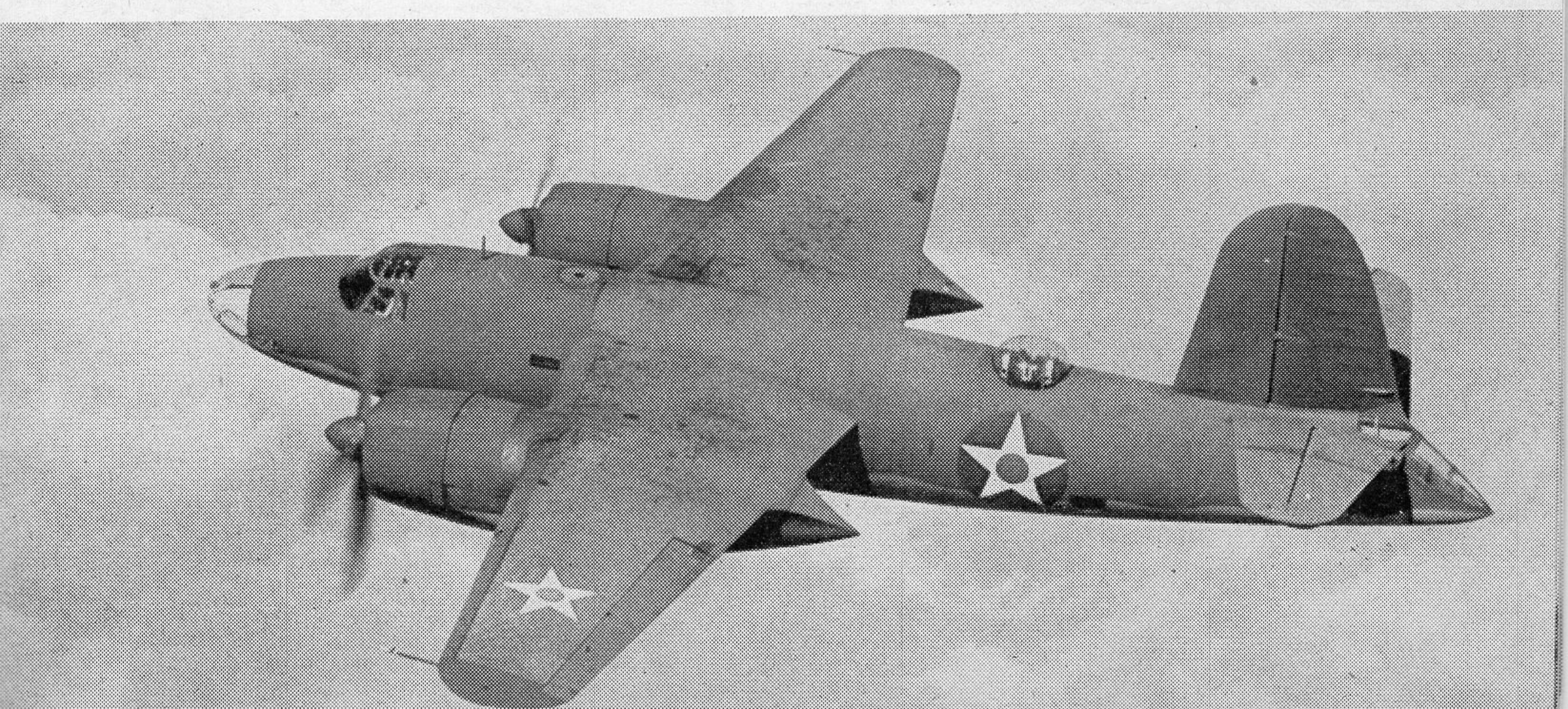
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sent a representative to Martin to sign contracts for his airplanes and thus become the first foreign government to buy his products. The Dutch standardized on Martin airplanes until their tragic fall to the Japs in 1941.

Martin trainers poured from the Los Angeles factory and in the spring of 1916 Martin was made a member of the War Aviation Board in Washington. While serving on this Board, Martin was approached by the Wrights concerning a merger between the two largest aircraft companies in the nation. With a capital of ten million dollars the Wright-Martin firm was established amidst cries of "giant airplane trusts," etc. One of the agreements Martin insisted on was that his Los Angeles plant remain intact; this wise move preserved his record as an "independent" which has carried through to this day, making him the oldest aircraft manufacturing company in the nation.

With three types of trainers, the Model T, R, and S, Martin continued to sell to private buyers and taught them to fly as part of the purchase price. One of his early customers and students was William E. Boeing, a Seattle, Washington lumberman who later founded the famous firm now bearing his name.

Martin B-26



During the maelstrom of decisions and retractions between the U. S., Britain and France, the aircraft production program was soon snarled in a hopeless tumult. It was decided that England and France should build the airplanes and the U. S. build the motors. The Wrights had production facilities for aircraft engines and the Aircraft Production Board decided that Wright-Martin should discontinue the production of airplanes (The Glenn L. Martin Company of California was producing one training plane each working day, a record at the time) and concentrate on the manufacture of engines. This was not a part of Martin's plans. He was an aircraft manufacturer, pure and simple, and he was left with but one choice: dissolve the partnership. With the financial assistance of a few friends he moved his firm to Cleveland, Ohio, and expanded his aircraft design and production facilities. Here the famous Martin Bomber, one of the outstanding planes of the war, was designed and built. Although it was not placed in production in time to see action, it became the Army's standard heavy bomber during the following peacetime decade.

The record of the Martin Bomber still stands as one of the most amazing performers in aviation history. Eager to see his new plane in action in France, Martin worked harder than ever before and some idea of what was accomplished can be gained from the fact that plans for the new plant in Cleveland were begun on January 9, 1918, and on February 18th ground was broken. On May 1st the huge factory was put in operation and on August 17, 1918, the first Martin Bomber made its test flight! Powered by two Liberty 400 hp engines, the MB-2 carried a ton of bombs at a speed of 125 mph, faster than the pursuit planes over the Western Front! It carried four machine guns and a 37 mm Baldwin cannon.

After two weeks of test flights, Eric Springer (test pilot), Donald Douglas (chief engineer) and Glenn L. Martin climbed aboard and flew the giant to McCook Field (now Wright Field Materiel Center) for Army acceptance tests. Capt. "Shorty" Schroeder put the MB-2 through its paces and pronounced it "okay." But Martin hadn't waited—there were already seven of them on the production line at his plant! Larry Bell (production manager) rushed those and dozens more to completion on an order for 50—but November 11, 1918, cut short the punishment that was in store for the enemy.

The entire course of the airplane as a military weapon was altered considerably on July 21, 1921, for on that day was given the final, conclusive argument to the "airplanes can't sink battleships" controversy. And, again, another Martin "first." Those were the days of the immortal "Billy" Mitchell for he had stood before Congress and blasted away with everything he had for a huge Air Power appropriation. But he met snarls and cat-calls on every hand. The press joined the argument and the opposing sides of the question grew louder and more volcanic with each passing day.

Finally, Josephus Daniels, Secretary of the Navy and Newton D. Baker, Secretary of War, arranged for the ultimate test of the plane vs. warship controversy: an attack by an actual plane on an actual ship! The test was to be entirely scientific and thorough. Four German warships, a submarine (U-117), a destroyer (G-102), a light cruiser *(Frankfort)* and a battleship *(Ostfriesland)*, were offered for the experiment and on June 21, 1921, three Navy F-5L flying boats knocked off the U-117 with light bombs. Next, General Mitchell led 28 Martin Bombers out over the G-102 and let go with 300 lb. bombs to send the destroyer to the bottom in just 19 minutes. Next came the cruiser and on July 18, 1921, a squadron of 18 Martin bombers sent the *Frankfort* to oblivion.

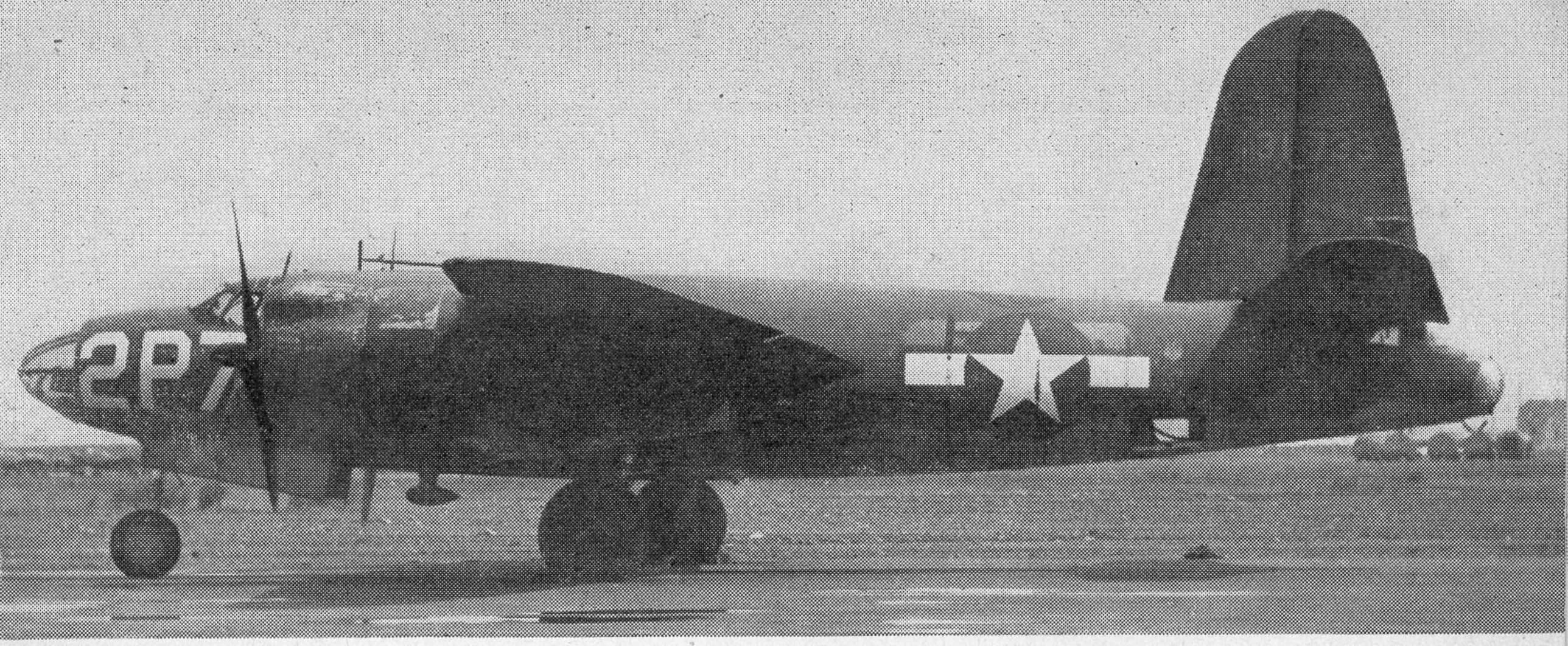
But the *real* test was to be the armor plate of the battleship. On July 20, 1921, the Navy F-5L's, Marine Corps DH-4's and Army Martins dropped 230, 520, and 600 lb. bombs on the *Ostfriesland*—but she took them without a quiver. Then Billy Mitchell called for his experimental 2,000 lb. bombs, slung them into seven Martins, took off on July 21, 1921, and headed for the battleship. The huge missiles whistled through the air and the following explosions were like nothing that had ever hit a warship. Twenty-one minutes later and the *Ostfriesland* disappeared to the depths. With Martin

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MARTIN B-26A

Two Pratt & Whitney "Double Wasp" R-2800-5

Span	65 ft. 0 in.
Length	58 ft. 2½ in.
Height	20 ft. 0 in.
Wing Area	525 sq. ft.
Gross Weight	25,000 lbs.
Power (2,600 rpm @ 7,500 ft.)	1,850 hp
Armament	Four .50 cal. m.g.
Wing Loading	47.60
Power Loading	6.76
Speed (max. @ 12,000 ft.)	350 mph
Ceiling (service)	30,000 ft.



Martin B-26B

Bombers. General Billy Mitchell had proved "airplanes *can* sink battleships" and this prophetic experience was to bear fruit less than a quarter-century later.

For the next 10 years Martin concentrated on the design and development of a series of bombers for the Navy. But in 1931 another Martin "first" rocked the speed bombardment airplanes. The first of this startlingly new type, the Martin XB-907, was the initial large all-metal airplane with a speed of 200 miles per hour! It became evident to Martin that this high speed would make the handling of a machine gun a difficult proposition so he devised the first fully enclosed bomber gun turret which was installed on Army bomber world when the *Flying Whale* appeared, first of the modern high the YB-10 of which 13 were produced. Production orders followed for the B-10A and the B-10B and an improved model, the YB-12 and B-12A, were built in quantity.

A twin engine mid-wing monoplane, the Martin Bomber set the style for the modern bomber with stressed skin wing, retractable landing gear, full engine cowling, fully enclosed crew positions, controllable pitch propellers and fully enclosed bomb load with remotely operated bomb doors. For this outstanding airplane design achievement, Glenn L. Martin received the Collier Trophy in 1933, aviation's highest award.

So popular was the design, planes of the type were sold to Argentina, Netherlands East Indies, Turkey, Siam, China and Russia. Outstanding testimony to the advanced design of the Martin Bomber is the use of twelve Model 139's by the Dutch against the Japanese invaders in

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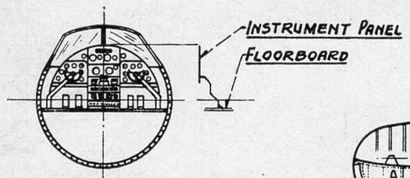
MARTIN B-26B

Two Pratt & Whitney "Double Wasp" R-2800-5
R.A.F. "Marauder I"

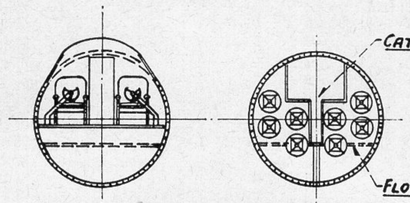
Span	**65 ft. 0 in.**
Length	**58 ft. 2½ in.**
Height	**20 ft. 0 in.**
Wing Area	**525 sq. ft.**
Gross Weight	**26,625 lbs.**
Power (2,600 rpm @ 7,500 ft.)	**1,850 hp**
Armament	**Seven .50 cal. m.g.**
Wing Loading	**50.75**
Power Loading	**7.20**
Speed (max. @ 12,000 ft.)	**346 mph**
Ceiling (service)	**30,000 ft.**



MARTIN MARAUDER

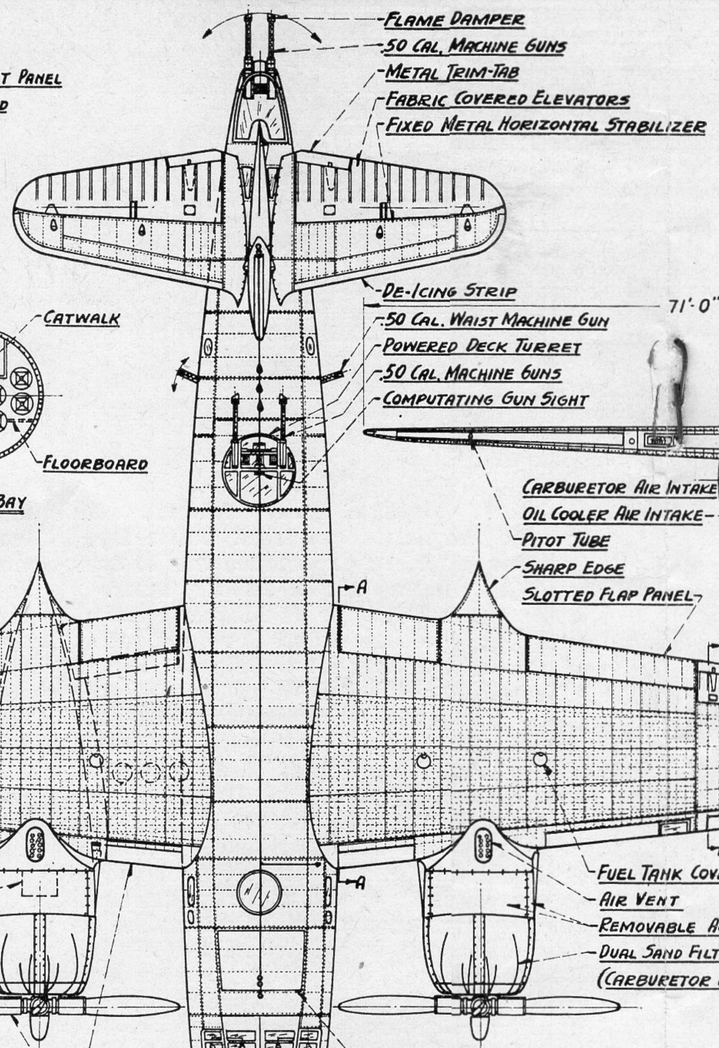


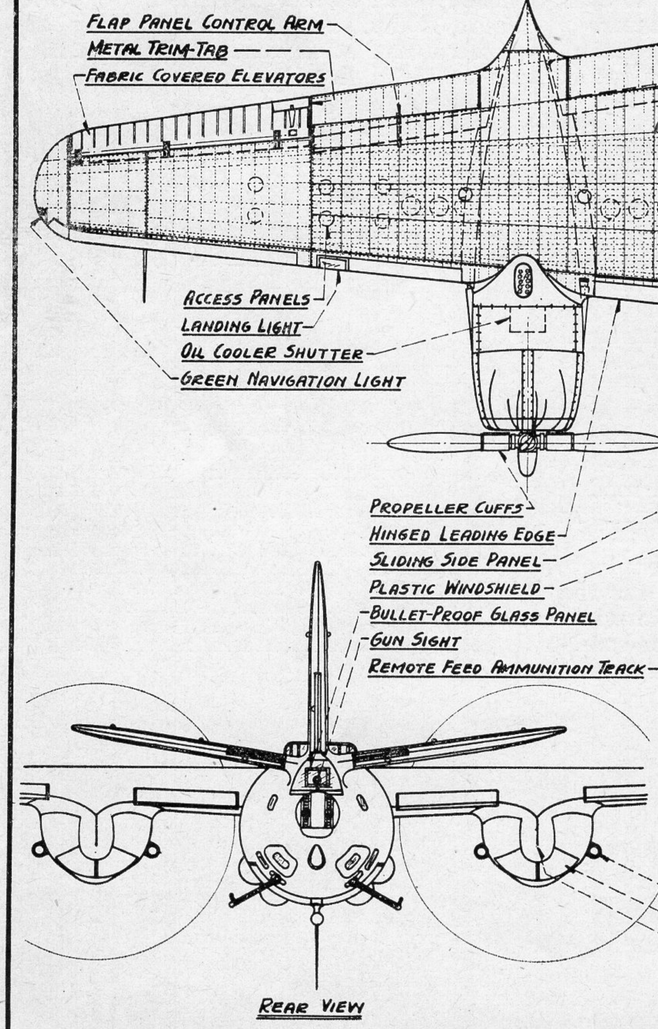
FORWARD VIEW



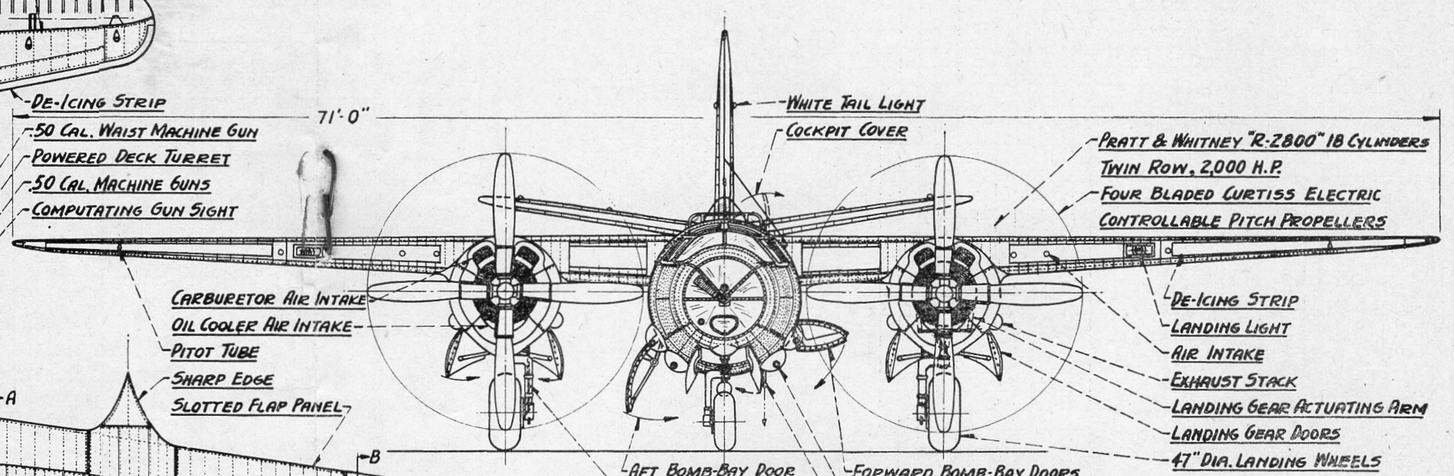
REARWARD VIEW

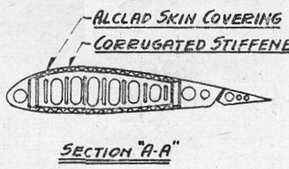
BOMB-BAY



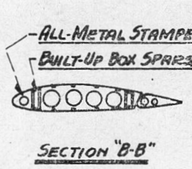


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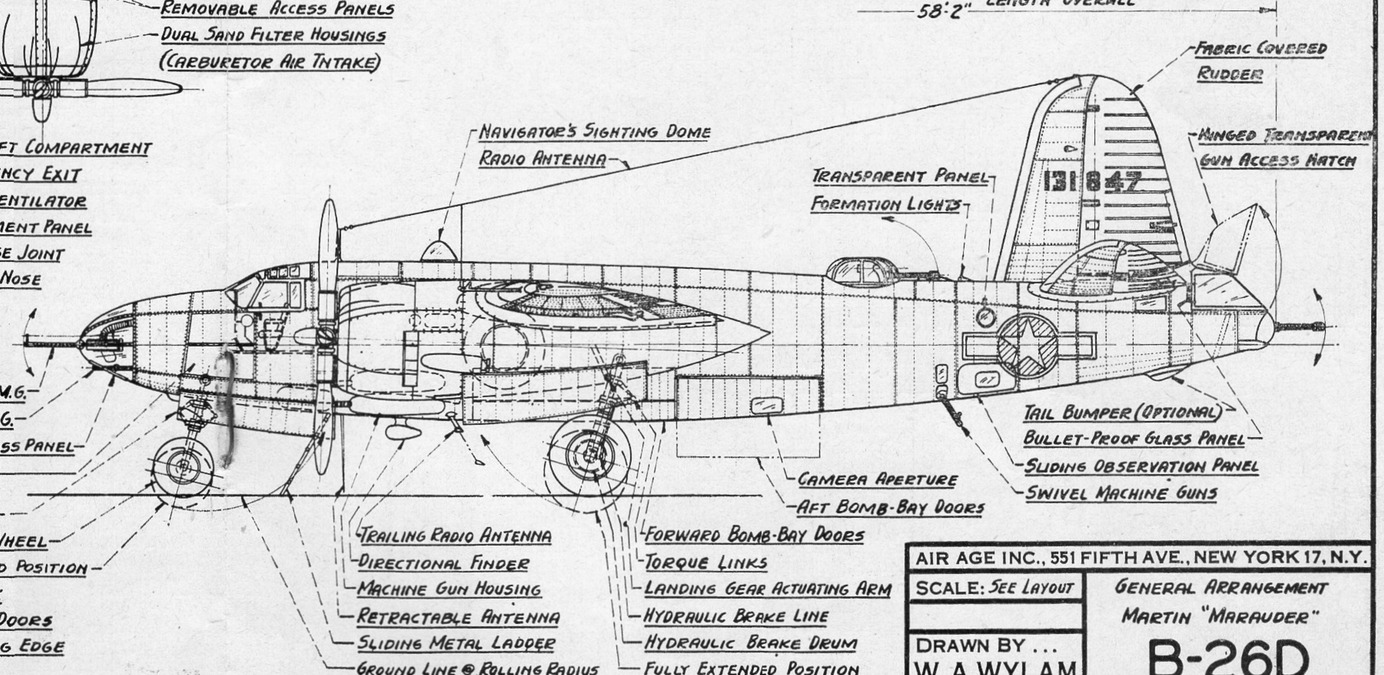




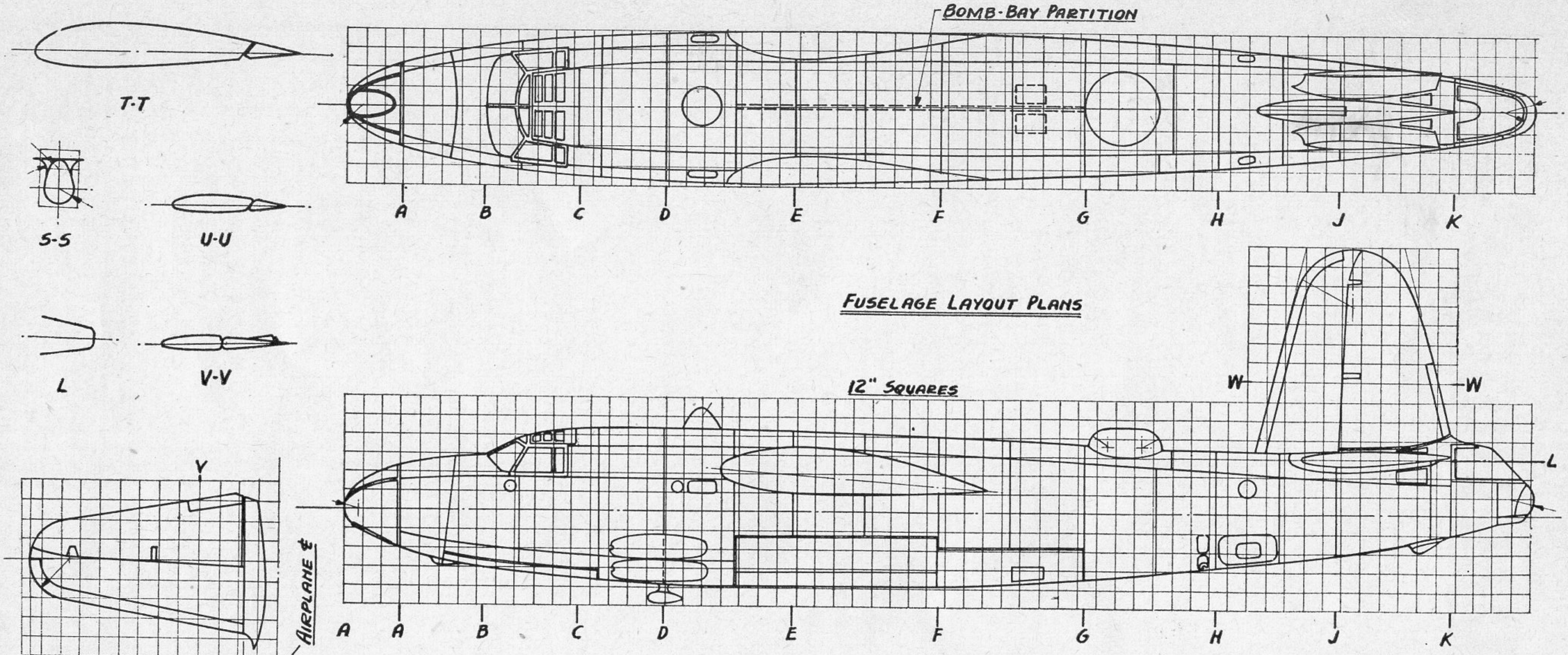
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SECTION "B-B"

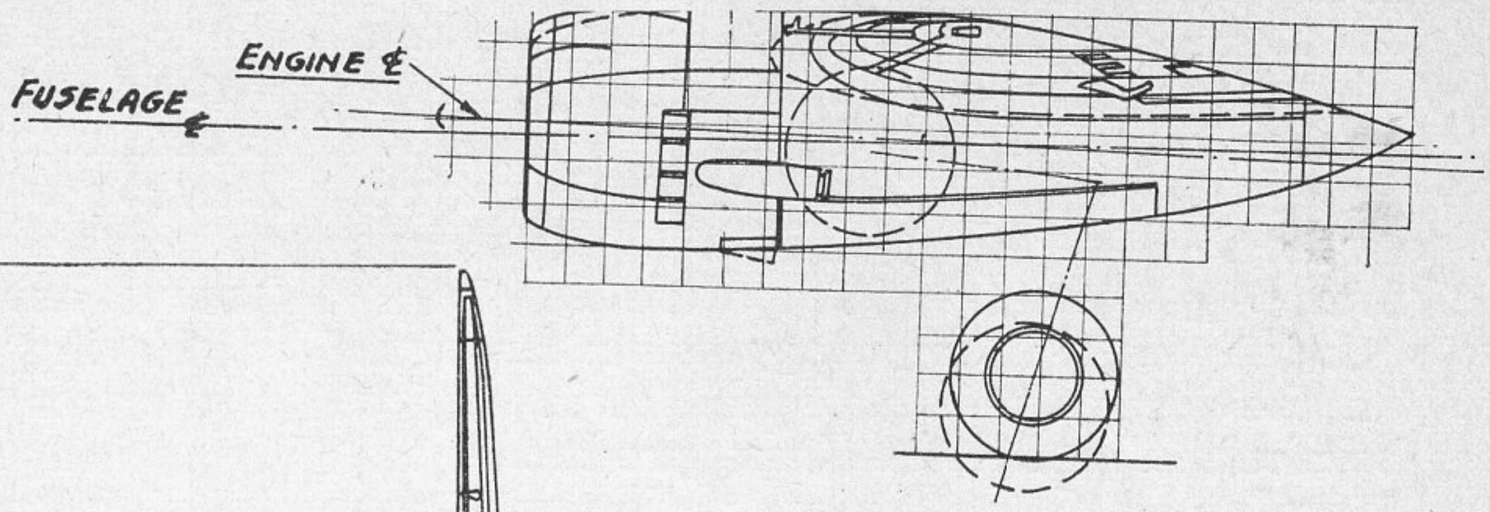


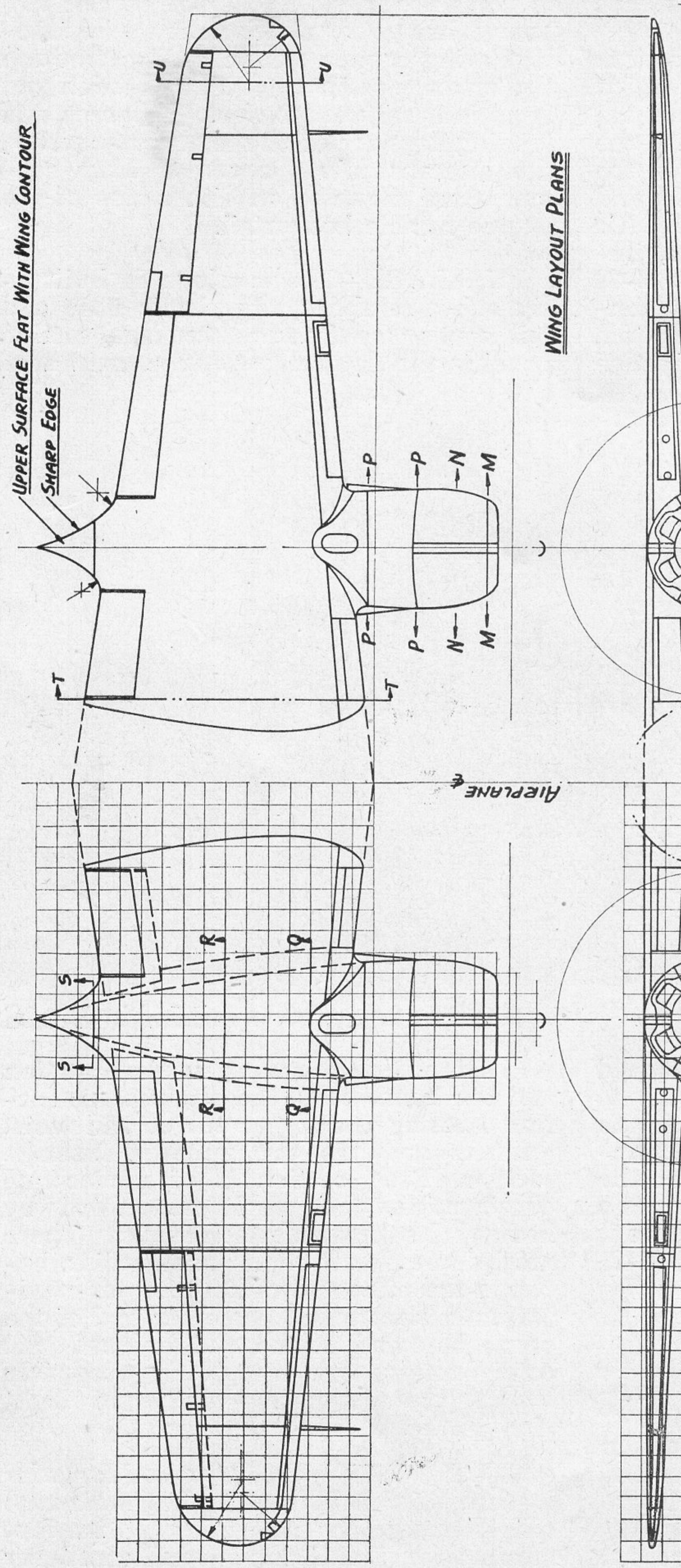
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SCALE: See Layout	General Arrangement Martin "Marauder"
DRAWN BY ... W. A. WYLAM	B-26D


BOMB-BAY PARTITION
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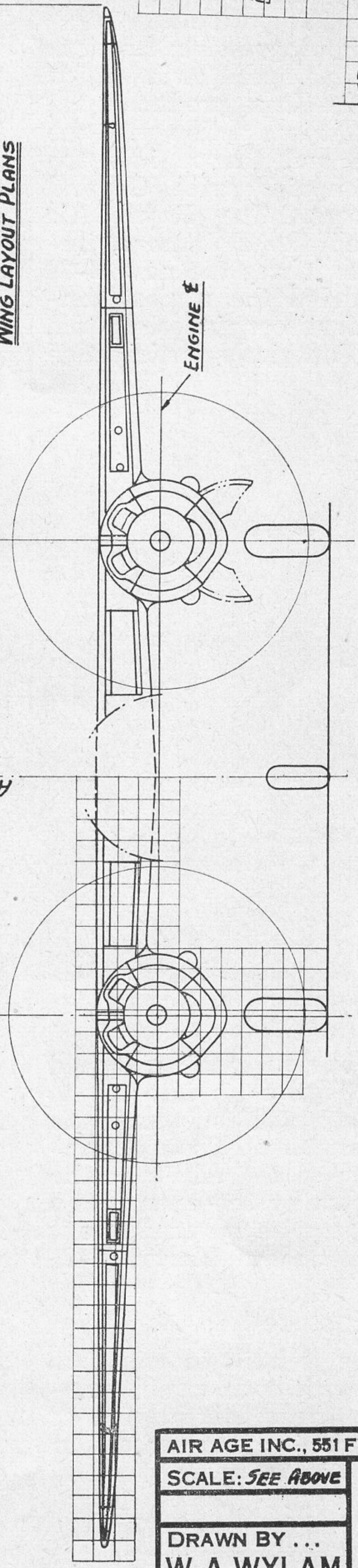


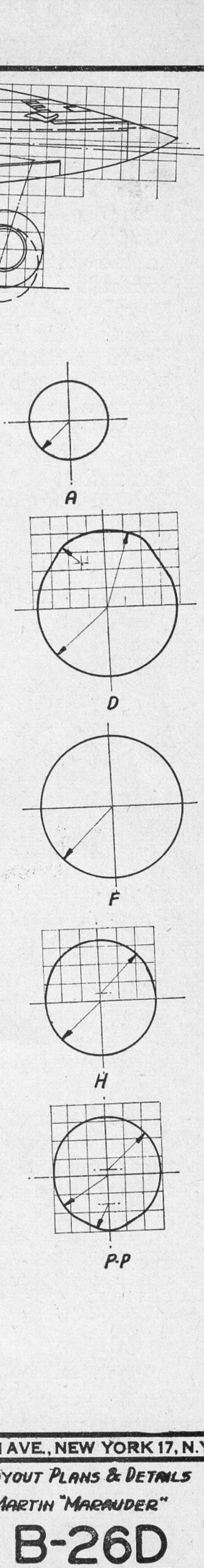
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WING LAYOUT PLANS





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SCALE: SEE ABOVE

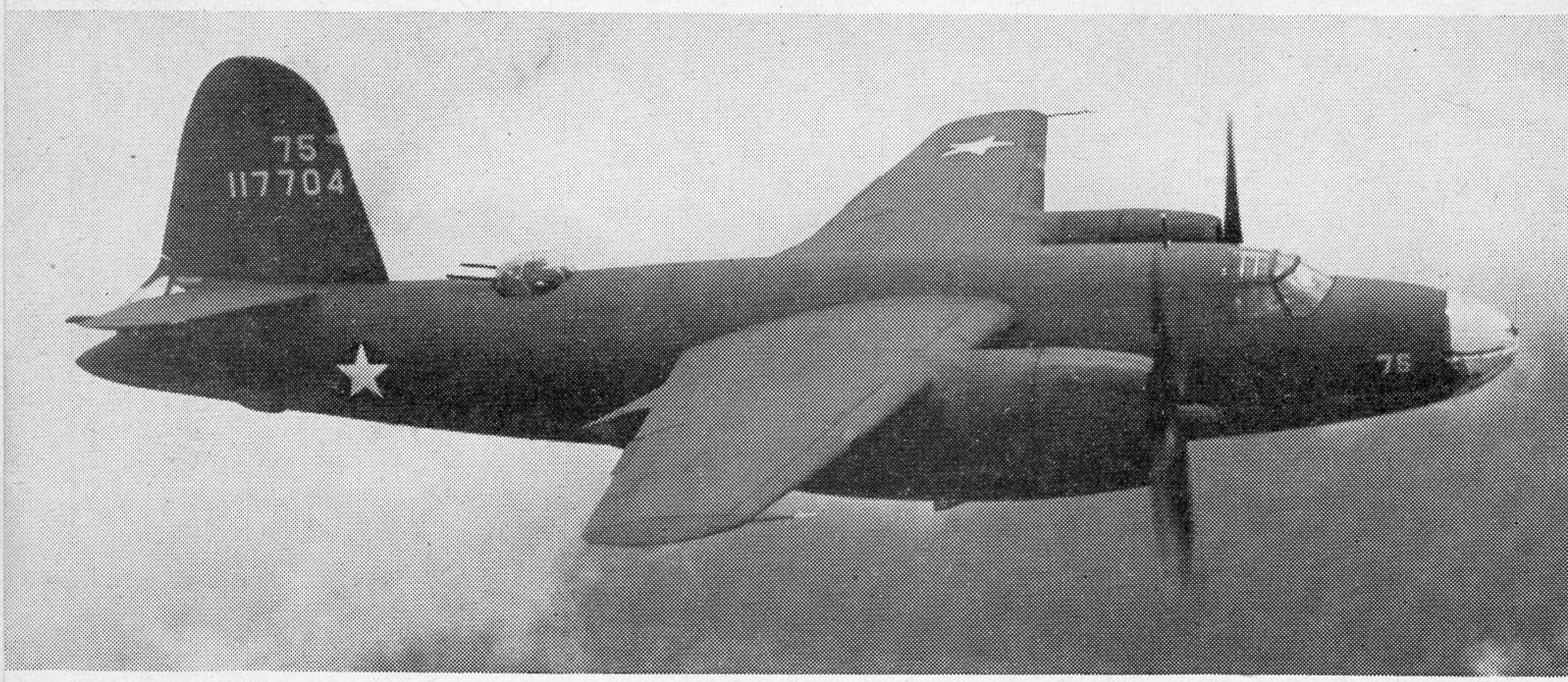
DRAWN BY ...
W. A. WYLAM

LAYOUT PLANS & DETAILS
MARTIN "MARAUDER"

B-26D

1942. The gallant Dutch fliers sank 26 Japanese ships including a battleship and accounted for thousands of Jap troops aboard these vessls. They were not shot down in combat but were destroyed, ironically, on the ground when the Japs found their well hidden airfield.

Continuing their progressive research on the design of high speed twin engine bombers the Martin firm produced the *Maryland* and sent it into action with the French Air Force and thence into the North African campaign with General Montgomery's forces. The Royal Air Force also received the *Baltimore,* improved version; but it was the new B-26 project that demanded the utmost concentration of the Martin engineering staff. The imminence of America's participation



Martin B-26C

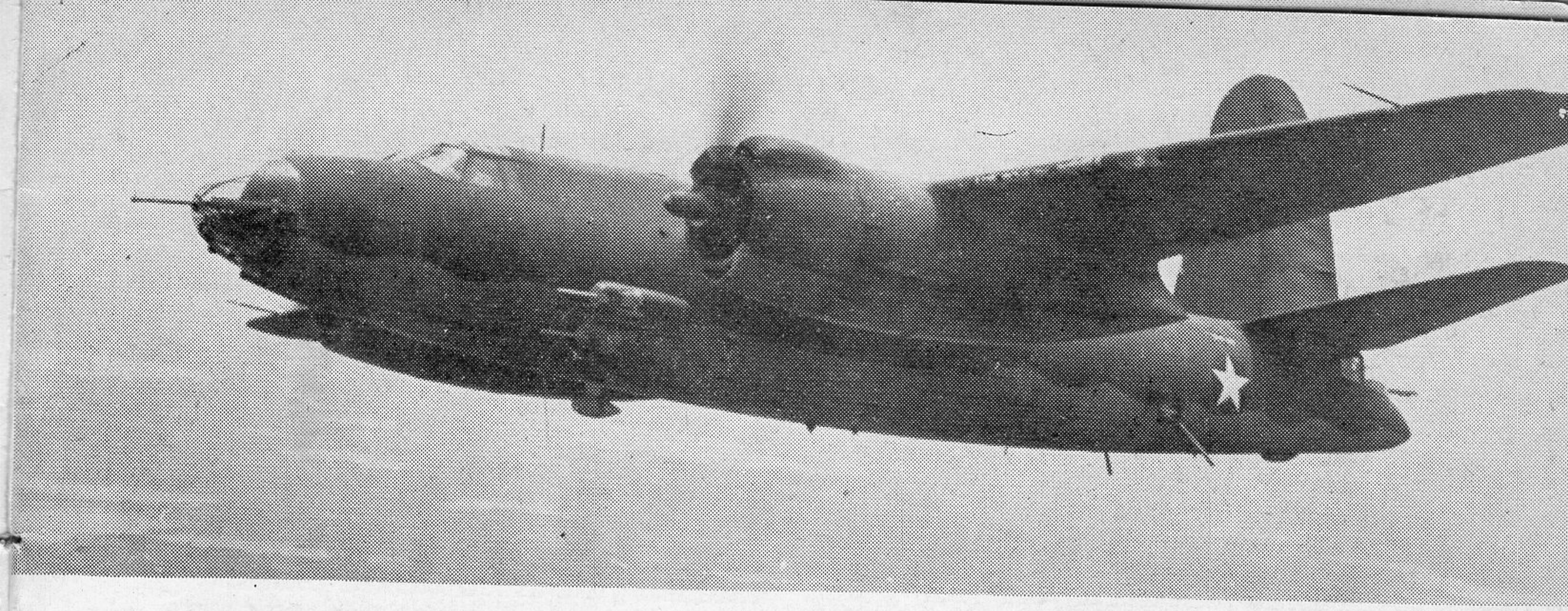
in the war and the obviously far advanced design of the B-26 gave an impetus to the project that extracted the maximum energy from each engineer. Their accomplishment is known to the Allies as the *Marauder* and known by the enemy as a hundred different surprise shouts. Here is a brief description of the Martin B-26 *Marauder:*

Structure

WING—The wing is built in only two major assemblies with each panel complete, a system differing widely from other airplanes. Each panel is composed of two heavy spars connected by main ribs and spanwise stiffeners, the whole, covered with flush riveted Alclad, comprising a heavy box beam. Leading and trailing edges are separate assemblies in the manufacturing stage as are the tip sections and the engine nacelles. These assemblies, other than the tips, are not removable in service; however the wing leading edge is hinged for ease of access to control cables. Each spar carries two heavy fittings for attachment to the fuselage wing section which carries through the fuselage main monocoque section and is an integral part thereof. Ailerons and landing flaps are of all metal construction, the ailerons fabric covered. Flap segments are mounted on either side of the engine nacelle beavertail.

FUSELAGE—The fuselage is built in six sub assemblies, the plastic nose and tail cones, the forward fuselage section housing the control crew, the main section comprising the wing fuselage section and the bomb bays, the aft fuselage section housing the upper turret and waist gunners and the tail gunners fuselage section. Each section is of monocoque construction, the whole assembled by heavy bolts through attach angles. There are bulkheads aft of the bombardier, between the pilot and radio operator-navigators compartment, on either end of the bomb bay and at the rudder post. All compartments are completely accessible by all crew members while in flight through hatches and crawlways.

EMPENNAGE—The Martin *Marauder* is distinguished by its dihedral horizontal tail surfaces, an innovation at its first appearance. Stabilizers are full cantilever all metal construction, the rudder and



MARTIN B-26C

Two Pratt & Whitney "Double Wasp" R-2800-5

Span	**71 ft. 0 in.**
Length	**58 ft. 2½ in.**
Height	**21 ft. 6 in.**
Wing Area	**664 sq. ft.**
Gross Weight	**33,850 lbs.**
Power (2,600 rpm @ 7,500 ft.)	**1,850 hp**
Armament	**Eleven .50 cal. m.g.**
Wing Loading	**51.00**
Power Loading	**9.16**
Speed (max. @ 15,000 ft.)	**300 mph**
Ceiling (service)	**30,000 ft.**

elevators fabric covered for ease of operation. Balanced surfaces are provided through internally attached weights in the leading edges of the surfaces.

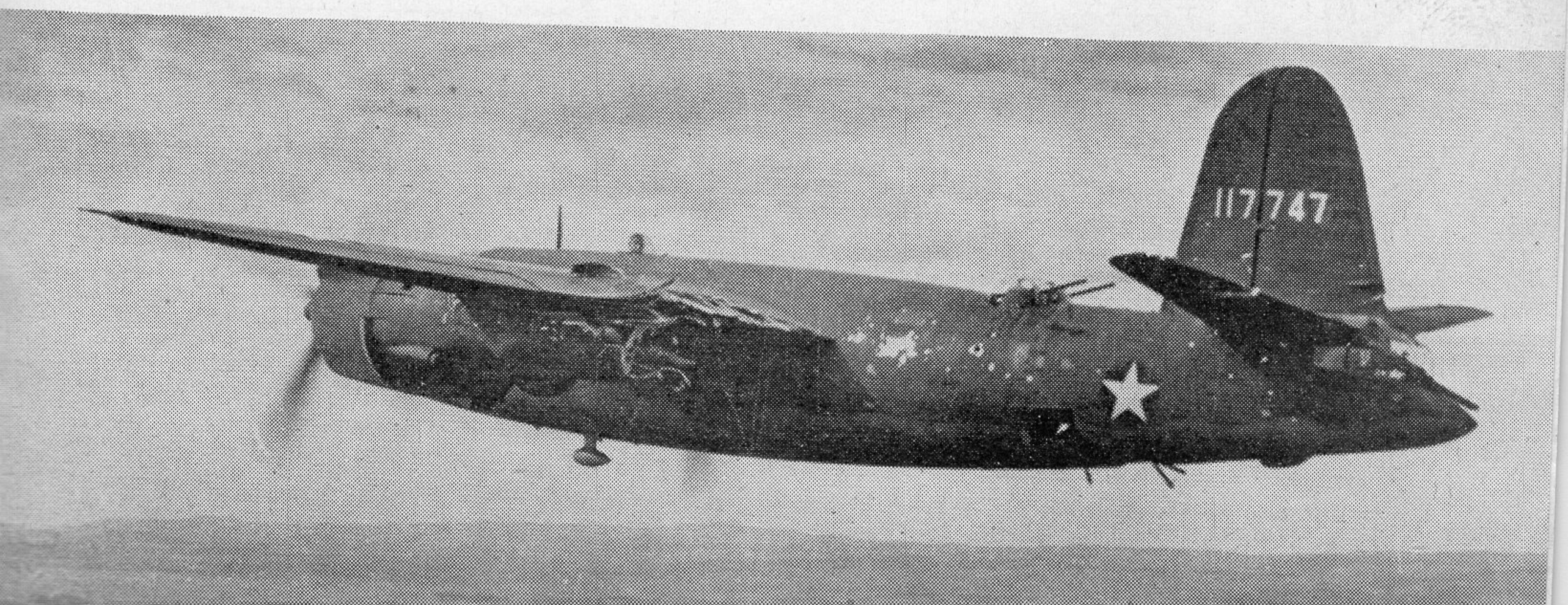
LANDING GEAR—The tricycle landing gear is fully retractable with clam shell doors completely sealing the wheel wells upon retraction. The main wheels are unique in that they retract forward, thereby permitting the drag of the slipstream to assist them in extension in the event of hydraulic system failure. Single leg hydraulic struts are used and dual brake assemblies are provided on the main gear only.

Power Plant

ENGINE—The Martin *Marauder* is powered by two Pratt & Whitney *Double Wasp* R-2800-S1A4G engines developing 2,000 horsepower for takeoff and equipped with a two speed gear driven supercharger. Each engine drives a four-bladed full feathering constant speed Curtiss Electric propeller with a diameter of 13′ 6″. Blade cuffs provide additional engine cooling on the ground and during full throttle climbs.

FUEL SYSTEM—The *Marauder* was the first American warplane to go into action with self-sealing fuel tanks, the patented *Mareng* fuel cells having been designed by the Martin Engineering Department as a result of reports received from the war fronts. Capable of effectively sealing holes up to .50 caliber fire, it has been one of the outstanding "firsts" of the Martin organization. These cells are carried within the wing main section between the spars and consists of a large number of small cells, thereby preventing fuel loss through damage to a single cell.

OIL SYSTEM—The oil is carried within each engine nacelle, the oil coolers be-



ing mounted just aft of the air intake at the bottom of each engine cowling.

Armament

Armament of the *Marauder* varies with different models, but in the latest series now in action a total of twelve .50 caliber machine guns is carried. In the nose is a flexible .50 mounted in a special socket operated by the bombardier. On the lower right side of the nose cone is a fixed .50 aimed and fired by the pilot. Four "package" .50's are mounted in pairs on either side of the fuselage just below the pilot's compartment and these, too, are aimed and fired by the pilot.

The upper hemisphere is covered by the famous Martin Model 250 CE Deck Turret containing two .50 caliber machine guns. Two .50 caliber waist guns are operated through sliding hatches on the lower aft side of the fuselage.

The tail turret is power operated and mounts two .50 caliber machine guns. This mighty array of armament is a result of Martin's desire at the outset of design to provide a medium bomber fully capable of operating without fighter escort. This policy has resulted in one of the few planes fully and adequately capable of "taking care of itself" on lone forays into enemy held territory.

The bomb load depends largely on the fuel and equipment load but it provides a maximum capacity of 4000 lbs. of bombs. The normal load for extended range operations is about 2000 lbs. and equipment is provided for mounting any desired arrangement of bombs, from twenty-six 100 lb. bombs to two 1000 lb. bombs. Aiming and release is handled by the bombardier in the extreme nose of the airplane.

Provisions for mounting a torpedo are made on both the standard Army version and special Navy versions.

Equipment

An inspection of the interior of a *Marauder* reveals an astonishing array of fighting equipment in so small a fuselage. The radio equipment is complete in every detail and is mounted on the floor and on shelves on the right side of the fuselage in the radio operator's compartment. Complete navigation equipment is carried on the opposite side of the same compartment resided over by the navigator. Ammunition for the various movable guns is carried in ingeniously designed containers with the tail gunner being provided with a remote ammunition feed.

Provisions are made for mounting an aerial camera in the belly of the ship between the two waist gunner stations. A seven-man life raft is carried with complete emergency rations and rescue signaling equipment.

Armor plate is generously provided for all crew members with the exception of the bombardier, a location which is impractical to protect. Of special interest is the tail gunner's protection provided by the location of his seat forward of a special armor plated bulkhead protecting him from fire from the rear. The pilot and co-pilot are protected from the side by externally mounted curved plates.

Large air intakes atop the engine cowling contain carburetor air filters permitting operation in desert and sandy areas.

Accommodations

A total of seven men comprise the flight crew of a *Marauder* as follows: the bombardier, located in the extreme nose of the ship; the *pilot* and *co-pilot,* located side by side in the flight control compartment; the *radio operator* and *navigator,* seated side by side in the compartment immediately aft of the pilots' quarters and forward of the bomb bay; the *engineer,* who performs repairs and emergency services on the airplane equipment while in flight; and the *armorer gunner,* who is in charge of all armament and who services the guns while in flight. The last two operate the deck turret, the tail turret and the waist guns as demanded by the details of the action. The navigator and radio operator also function as gunners when the need arises.

Geneology of the *Marauder*

XB-26

The Martin XB-26 medium bomber was designed in answer to a circular proposal for the type issued by the (then) Materiel Division of the Army Air Corps at Wright Field, Dayton, Ohio. The specifications outlined a twin-engine monoplane with a crew of five, a one-ton bomb load, range of 3000 miles, service ceiling of 20-30,000 feet, armament of four .30 caliber machine guns, one of which must be located in the extreme tail, and a speed of 250-350 miles per hour. Work on the radically new XB-26 was begun in the fall of 1938 under the direction of William K. "Ken" Ebel, now Vice President in charge of Engineering of the Glenn L. Martin Company. Detailed plans and specifications were completed within 9 months and submitted to the Materiel Division.

In September 1939 Martin was awarded a contract for the production of 1100 air-

planes of the type, before the completion of the first experimental airplane! The XB-26 was completed one year later and made its first test flight on November 25, 1940 with Ken Ebel at the controls. Its early test flights proved it to be the fastest bombardment airplane ever built.

B-26

The first experimental model was hardly off the assembly line when the first of the production models, the B-26, was ready for test flights. The B-26 was identical to the experimental model.

MARTIN B-26D

Two Pratt & Whitney "Double Wasp" R-2800-5

Span	71 ft. 0 in.
Length	57 ft. 6 in.
Height	21 ft. 6 in.
Wing Area	664 sq. ft.
Gross Weight	35,000 lbs.
Power (2,600 rpm @ 7,500 ft.)	1,850 hp
Armament	Twelve .50 cal. m.g.
Wing Loading	52.75
Power Loading	9.46
Speed (max. @ 15,000 ft.)	274 mph
Ceiling (service)	30,000 ft.



B-26A

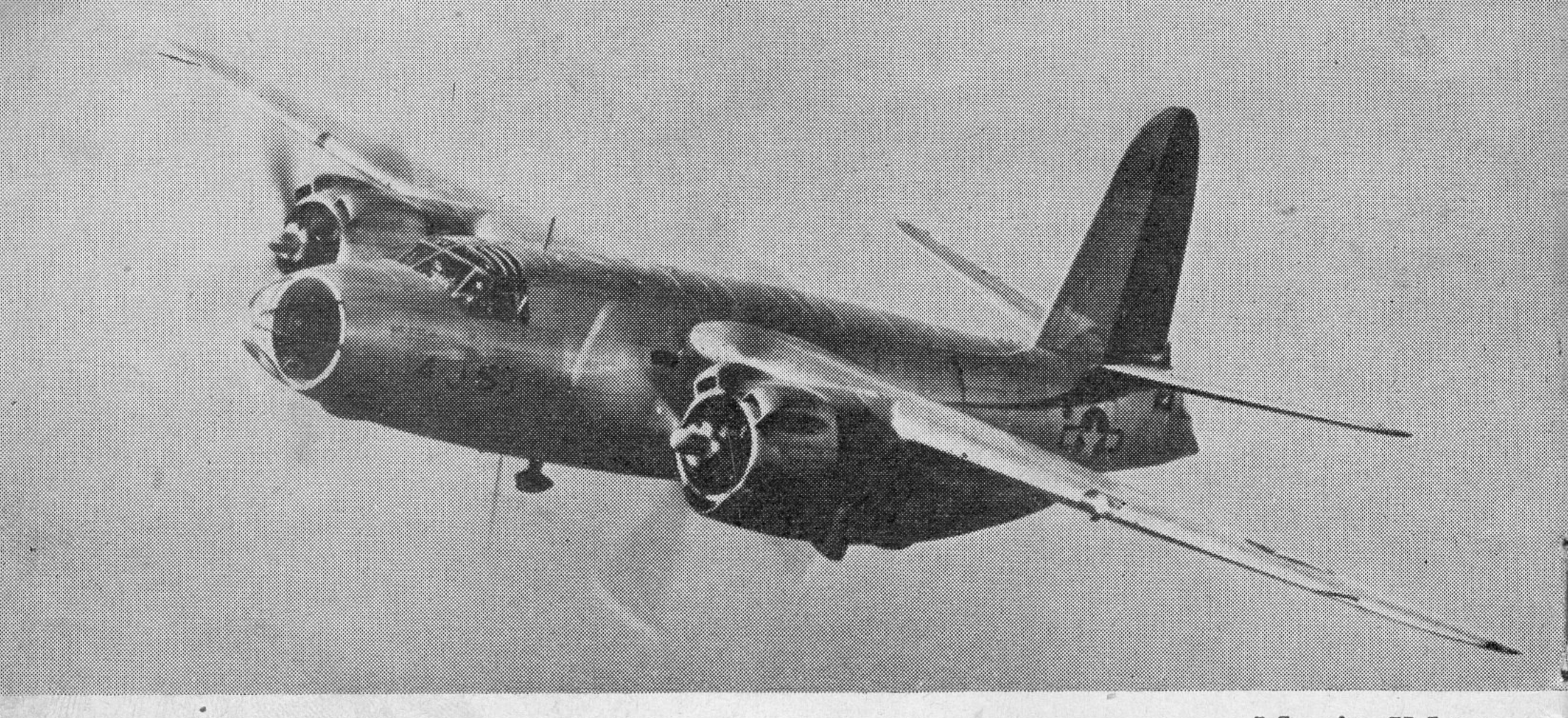
This model featured a change in armament from the .30 caliber machine guns installed previously to the heavier and more deadly .50 caliber weapons. Shortly after completion the B-26A went into action in the Pacific flying from Port Moresby, New Guinea in the summer of 1942. This gave it the distinction of being the first airplane designed during the war to see service in the war, including all the warring nations' aircraft.

B-26B

This model went into quantity production following Pearl Harbor and comprised an extensive program of assembly and sub-assembly manufacturers scattered throughout the United States. Principal external changes are the enlarged air intake ducts atop each engine nacelle cowling. Considerable difficulty had been experienced with earlier models in landing and takeoff due to the high speeds of the fast bomber. While perfectly safe and efficient in the hands of an experienced pilot, the *Marauder* proved too "hot" for the young pilots fresh from war-accelerated training programs. To solve this difficulty, considerable extra wing area was incorporated on the *Marauder* which, although cutting a healthy slice out of the top speed of the craft, slowed down its landing speed until it was safe in the hands of trained but inexperienced pilots. This change took effect on the B-26B-4 model, but since the earlier standard B-26B models had the shorter wing its dimensions are shown on the specification table.

B-26C

A new tail turret was added to this model housing two .50 caliber machine guns instead of the single gun formerly



carried. In addition, package guns were fitted, two on either side of the lower fuselage under the pilot's compartment.

B-26D

A power driven tail turret was installed on this model in addition to a fixed gun in the nose. This gave a total of twelve .50 cal. machine guns to the *Marauder*, one of the most heavily armed in existence.

JM-1

The Navy operates a group of *Marauders*, mostly earlier models with armament removed, as target tow planes and for various general utility duties. These are designated JM-1.

Later Models

Although further advanced models of the *Marauder* are in service, no details may be given due to their restricted status.

* *

We have heard a great deal of adverse comment about the handling characteristics of the *Marauder* which have centered about its high landing and takeoff speed. There is a very simple explanation for this, although its magnitude has been exaggerated out of proportion by an over-zealous and non-technical press. In order to gain speed, the wing span and area of an airplane is often reduced, thereby eliminating a considerable portion of drag-producing surface. This results in increased wing loading which makes for high speed in flight but increased landing and takeoff speed. The *Marauder's* wing loading of more than 56 lbs. per square foot is the highest of any airplane with a weight of 17½ tons or less and greatly exceeds that of the fastest fighter planes. This wing loading results in its high speed being far faster than any airplane of its weight or near it. Such level flight performance cannot be gained without an appropriate loss in something else, in this case landing speed.

With adequate control at low speeds and a tricycle landing gear, a high landing speed is of no concern to an experienced pilot. A *Marauder* in the hands of such a pilot is one of the deadliest planes, and safest planes, in action. In the hands of an inexperienced pilot (newly assigned trainees, etc.), it can be a serious problem, as can any plane.

This Analysis is No. 5B in the series:

GROUP II—ARMY BOMBERS

No. 1B North American "Mitchell" B-25
No. 2B Consolidated "Liberator" B-24
No. 3B B-15 and B-19
No. 4B Boeing "Flying Fortress" B-17
No. 5B Martin "Marauder" B-26
No. 6B Boeing "Superfortress" B-29

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GROUP I—FIGHTER PLANES

No. 1 Lockheed "Lightning" P-38
No. 2 Republic "Thunderbolt" P-47
No. 3 Grumman "Hellcat" F6F
No. 4 Curtiss "Warhawk" P-40
No. 5 Vought "Corsair" F4U
No. 6 North American "Mustang" P-51