WAR DEPARTMENT
FM 30–30

NAVY DEPARTMENT
BUAER 3

RECOGNITION
PICTORIAL MANUAL

RESTRICTED

WAR DEPARTMENT
FM 30–30

NAVY DEPARTMENT
BUAER 3

RECOGNITION
PICTORIAL MANUAL
AIRCRAFT SUPPLEMENT No. 1

RESTRICTED

WAR DEPARTMENT

FM 30-30

NAVY DEPARTMENT

RECOGNITION

PICTORIAL MANUAL

AIRCRAFT SUPPLEMENT No. 2

RESTRICTED

WAR DEPARTMENT
FM 30–30

NAVY DEPARTMENT
BUAER 3

RECOGNITION

PICTORIAL MANUAL

AIRCRAFT SUPPLEMENT No. 3

RESTRICTED

WAR DEPARTMENT
FM 30-30

NAVY DEPARTMENT
AN–OPNAV-P23-100

RECOGNITION

PICTORIAL MANUAL

AIRCRAFT SUPPLEMENT No. 4

RESTRICTED

WAR DEPARTMENT

Washington, April 1, 1943.

1. FM 30–30, Military Intelligence, Aircraft Recognition Pictorial Manual, is published for the information and guidance of all concerned.

2. This manual supersedes FM 30–30, February 21, 1942; FM 30–31, August 1, 1941; FM 30–34, July 18, 1941; FM 30–35, March 11, 1942; FM 30–38, March 16, 1942; and FM 30–39, October 24, 1941.

(A. G. 062.11 (4-1-43).)

By order of the Secretary of War:

G. C. MARSHALL,
Chief of Staff.

Official:

J. A. ULIO,
Major General,
The Adjutant General.

Distribution:

D(6); B(5); R(10); Bn(5); C(10). For explanation of symbols see FM 21–6

TRAINING DIVISION • BUREAU OF AERONAUTICS
NAVY DEPARTMENT • WASHINGTON, D. C.
JUNE 1943

THE FIRST REQUIREMENT in warfare is the ability to distinguish friend from foe. Nowhere is this more difficult than in the air. Owing to the great speeds and heights attained by modern aircraft, recognition is frequently dependent on a momentary glimpse. In the same way instant and accurate recognition of surface craft, mechanized ground equipment, etc., is fraught with great difficulties owing to varying conditions of visibility, distance, and variety of types.

Before the outbreak of this war few realized the grave problems of recognition that the increasing dominance of air power would present. The existence of these problems was soon apparent when, after two months, the casualties of the British Advanced Air Striking Force in France amounted to:—Shot down by the Germans, eight: Shot down by the French, nine. In those days the only question asked was, "Is it in range?" Since then mistakes in recognition, on the sea, on land, and in the air have been too numerous to mention. Usually these mistakes are attended by the most serious consequences.

It is now fully realized that the only way to prevent these occurrences is by demanding the highest general level of proficiency in recognition throughout the services. This can only be attained by concentrated study. It is not suggested that practice will make one absolutely perfect, but it will certainly go most of the way toward reducing the chances of a man being a danger not only to himself, but to his comrades-in-arms.

The Navy's problem at sea, whether on warship or merchant ship, is to know as soon as possible whether any aircraft or ship within sight is friendly or hostile, what type it is, and how it is likely to attack, and from that to estimate the best method of defence.

The Army's problems are also varied. Antiaircraft gunners should be able to recognize any airplane within range, or likely to come within range, whether flying directly toward the battery or not. Columns on the move may have to contend with the low-flying attack-bomber or the dive-bomber. Instant recognition saves lives and leads to the destruction of the enemy.

The Air Forces, both of the Army and the Navy, have even more problems to solve because the views from which crews may see the enemy are not confined to those from underneath. The fighter pilot may hope to dive on the enemy from above and behind, but to him the underneath view is important too. The tail gunner needs the head-on view. All must know their aircraft well. In a completely different category are the photographic interpreters who have to recognize the top-plan views of aircraft dispersed on airdromes or in ports. In the past, too little attention has been paid to this important silhouette. Likewise, the accurate recognition of mechanized ground equipment is of extreme importance.

The Ground Observer Corps has concentrated much attention on recognition. Again any aircraft within view, friendly or hostile, should be recognized quickly—even through a momentary gap in the clouds.

The first thing to be appreciated is that recognition does not begin and end with appearance. Certainly it is essential to distinquish between the appearance of friend and foe; *but this is seldom sufficient*. It is also essential to recognize the exact type. In the

case of aircraft, this recognition gives knowledge of the wing span, approximate speed, probable armament, and if hostile, a reasonable deduction as to future actions. The situation is similar to that of surface-craft, where recognition has a tactical value and gives an idea of what the enemy can do and how he may be dealt with, once recognized.

What enables a person accurately and speedily to recognize tanks, ships, planes, etc.? The process is no different from that of recognizing an automobile, a horse, a bird, or a friend. Let one ask himself the question, "When I see a friend walking down the street, do I look at every feature of him and having gone through a process of analysis, decide that it is Bill?" Obviously not. Recognition is instinctive. One knows immediately that it is "Bill" because one is *familiar* with his whole appearance and general characteristics, such as the way he stands or walks. It is not difficult to translate these characteristics into terms of airplanes, ships, etc. The combination of all these characteristics into the over-all effect of an object is known scientifically as the "total form" of that object. Now one can ask one more question. "Why did you get to know the "total form" of a friend or automobile, or horse?" The answer is, because you were interested in him or it. Therefore, the requirement for efficient recognition is familiarity based on a general knowledge of air or surface craft, or tanks, or other military equipment, a knowledge which will only be gained by an aroused interest and enthusiasm for them. If this is borne in mind, there will finally be an end to those famous last words, "I *think* they're ours."

NOTE:

"RECOGNITION" means VISUAL recognition.

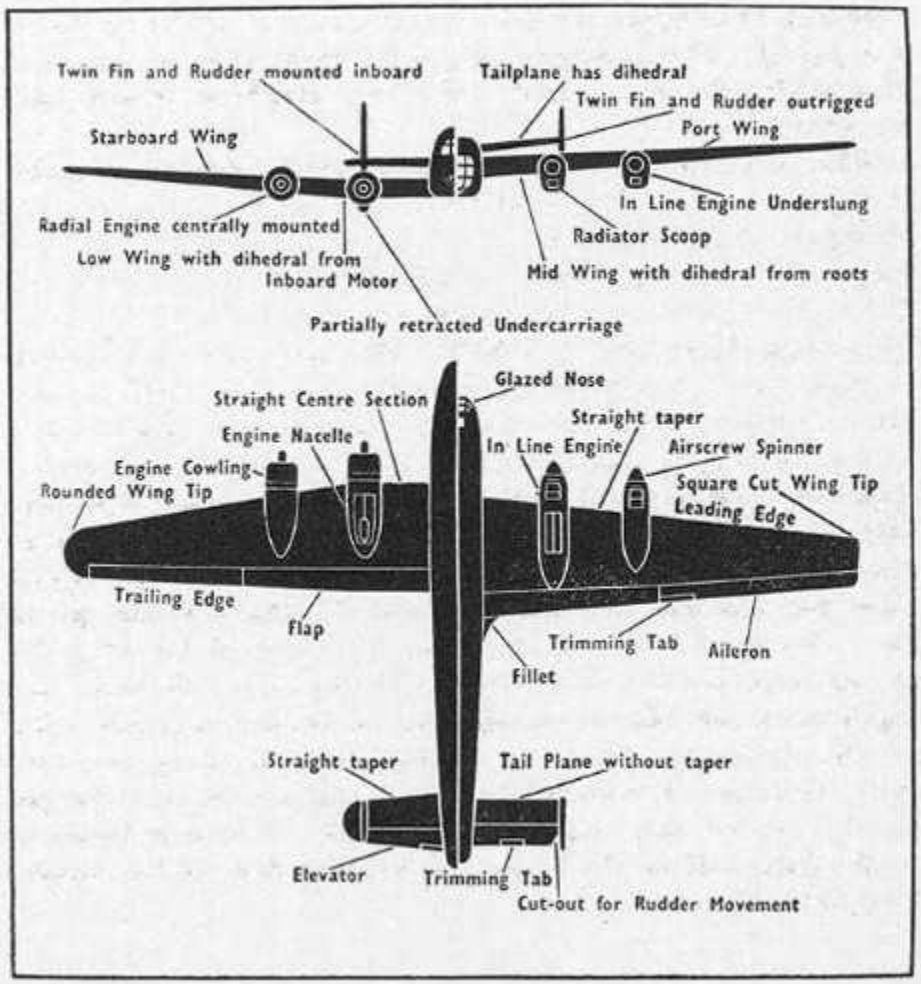
"IDENTIFICATION" means identification OTHER THAN VISUAL.

PICTORIAL MANUAL

The present manual is primarily designed for self-instruction and general use but will also serve as a text in recognition courses. It includes four types of material: black and white silhouettes; wash drawings; photographs; and editorial matter.

Silhouettes are the foundation stone on which all recognition training is based. They may seem dull and uninspiring but the fact remains that the "three-view" silhouette, giving the head-on, plan, and side-view shows every salient recognition feature of a ship or plane just as an architect's drawing of plan, section, and elevations gives the essentials of a building. They are basic diagrams and their value is evident from the accompanying example which shows how great is the contrast between the halves of two different airplanes and indicates in print the facts which an experienced observer can read directly from a silhouette. The wash drawings pick up where the silhouette diagrams leave off. By adding form and detail, they advance toward reality while still conveying accurate facts like engineering drawings. Both types of drawing should be studied for their over-all effect and not just for details. Photographs give the final step toward a realistic impression and show the aircraft, etc., from various angles. The editorial matter is intended to drive home the plane or ship by lending it interest and appeal; also such data are included as can be released.

The material in this manual has been assembled and edited jointly by Army and Navy aviation training divisions. Much valuable assistance has been contributed by the British, particularly in supplying silhouettes. The bulk of the material came from intelli-



gence and photographic sources in both Army and Navy. The data and dimensions are the most exact available. The Army and Navy can release only approximate performance figures for their own planes and ships but the dimensions given have been obtained from their respective design sections. For foreign models, the best available figures are given and, where reliable sources of information differ on dimensions, the more probable figure is given and the less probable one follows it in parenthesis. It is suggested that when figures are definitely confirmed, the necessary corrections be made by the individual holding this book. The manual will be constantly enlarged and amended.

MOTION PICTURES

An ideal form of training would naturally be to see actual aircraft, ships, etc., as often as required until one was entirely familiar with them in all positions and under every condition of visibility. This is clearly impracticable; therefore the training medium which reproduces this ideal with the greatest realism is the moving picture. There are, at present, three types of training film available. The first is introductory and is intended for presentation in the primary stages of training. Its object is to serve as a glossary of terms explaining to the beginner the meaning of such words and phrases as "dihedral", "taper", "underslung", etc. The second kind of film is that dealing with the recognition of individual types of aircraft, ships, etc. This class of film is planned on the principle that it is of basic importance to have detailed knowledge. Flying or action shots are combined with close-up stills, diagrams, and animated drawings, all joining with the commentary to give the visual directive to the human eye which is so essential. This series may be used effectively, provided detailed analysis is not accepted as a final solution to the problem. An airplane, for example, cannot be learned just by memorizing its wings, engines, fuselage, and tail, separately and without regard to the "total form" effect they join to produce; for in recognition the whole is more than the sum of its parts. The third class of film is well represented by the "Quizcraft" Series. This class comprises actual flying shots of various aircraft and is designed for use at a more advanced stage of training. It is not suggested that these films present a serious recognition problem to a man with any degree of training. The primary object is to give the student the opportunity to see aircraft in conditions as nearly as possible approaching reality. Emphasis, therefore, is placed upon distant shots under all conditions of visibility. The "test" element is secondary and only introduced to maintain interest. Training films and film strips are listed in FM 21-7 and in the Catalog of U. S. Navy Training films.

FILM SLIDES AND FILM STRIPS

Film slides and film strips are another means of presenting silhouettes, wash-drawings, and still photographs. By reducing progressively the time of exposing them, it is possible to develop speed in recognition. Time intervals as short as one-fifth second can be obtained with an improvised shutter consisting of a piece of cardboard with a hole in it which is allowed to drop across the projector lens.

FLASH METER TRAINING

This is a development in the method of projecting film slides perfected for use by the U. S. Navy. It has also been adopted, with certain modifications, by the U. S. Army Air Forces. Equipment is used which consists of a slide projector with a flash meter (like a camera shutter). The slides are flashed on the screen at progressively faster speeds up to 1/100th second. At such speeds, the student is forced to recognize an object from its "total form" because there is no time for the eye to scan its parts. The importance of this approach has already been mentioned. This develops a "skill of seeing" and holds the student's attention like a game of skill. For fullest application, a properly trained instructor is necessary.

MODELS AND POSTERS

Sets of scale models of aircraft and surface craft are obtainable in accordance with existing regulations and policies. These models are highly accurate and carefully constructed to scale. Suspending airplane models in various flying attitudes or setting out ship models in formation is all very well as far as it goes, but even more important is it that they should be available to students for examination. They may satisfy themselves, the models being accurate, that certain features do exist which may well have been missed when seeing representations of the aircraft or ship on former occasions. The scale model is eminently suitable as it can be made to adopt any position, whereas the views presented by slides, photographs, and silhouettes are necessarily limited.

Posters are valuable for teaching classes if no projector is available. Posted conspicuously, they constantly refresh the memory.

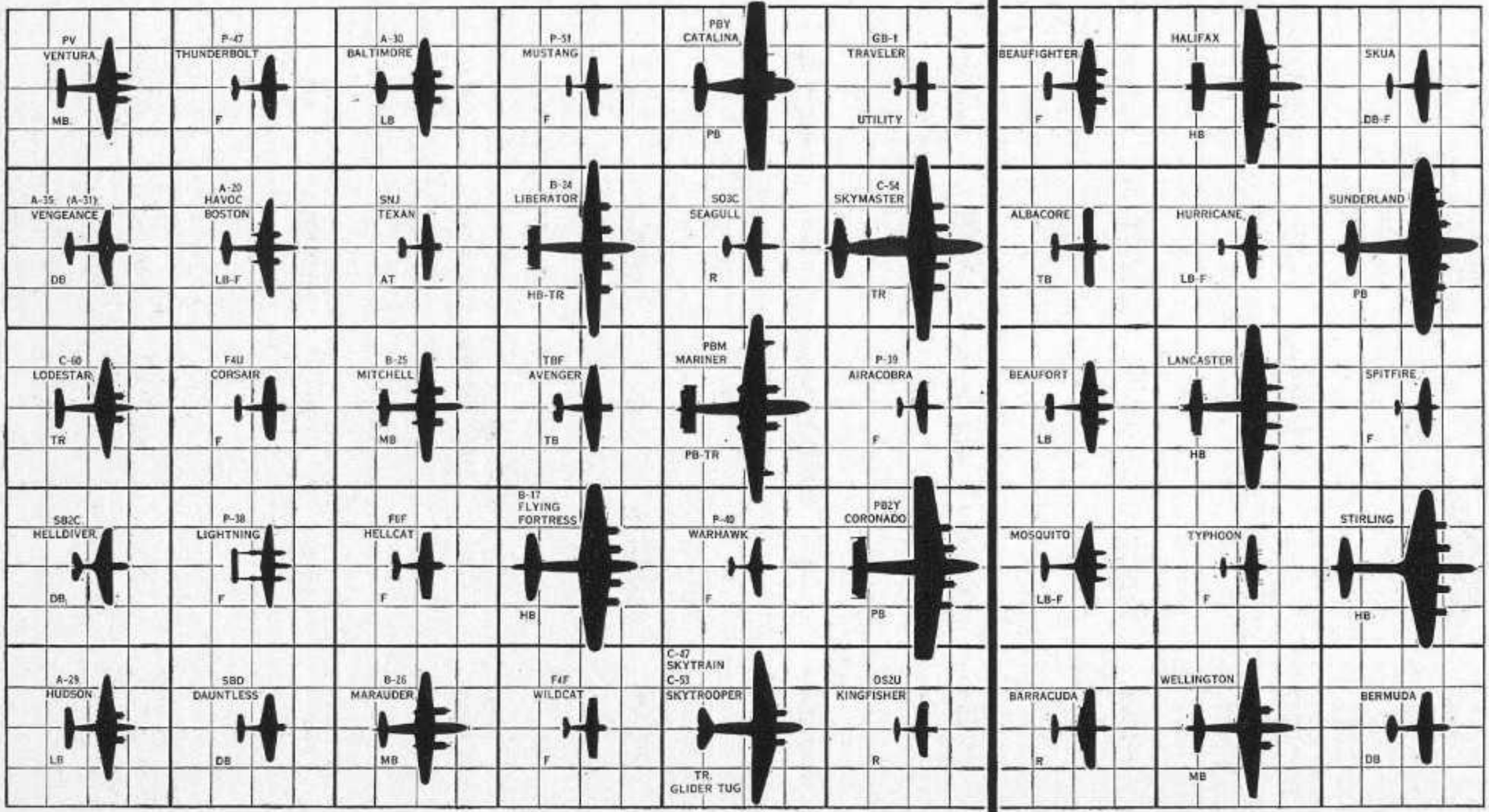
TEACHING RECOGNITION

The above training aids can best be utilized for teaching recognition if training progresses as follows. FIRST, the student is taught the important items of nomenclature using the glossary in this manual, supplemented by the introductory training films and film strips. SECOND, individual planes, ships, etc., are presented, with emphasis on their silhouette, engineering form, photographic appearance, and interest appeal. In addition to this manual, large posters of silhouettes or wash-drawings may be used. Silhouettes, wash-drawings, or photographs can also be projected on screens using delineoscopes or film slides or strips. THIRD, the student's attention must thereafter be directed to recognizing the "total form" of the object. For this purpose, motion pictures (on individual airplanes, ships, etc.) and models can be utilized to good advantage. Film slides and film strips projected for progressively decreasing periods of time are the best means of presenting "total form" and *should be utilized to the maximum extent to which these aids are available.* FINALLY, the aircraft, etc., are observed under the most realistic conditions possible, as in the "Quizcraft" series of motion pictures. Where necessary the ingenious recognition instructor should improvise his own aids and equipment. Cases are reported where an opaque projector (i. e. reflectoscope) was concocted from a box, bulbs, old lenses, cardboard tube, etc. In this, as in any other enterprise of war, improvisation will often be the rule and not the exception.

In conclusion, PRACTICAL RESULTS ARE THE FINAL TEST AND A STUDENT MUST TRY HIS SKILL ON EVERY ACTUAL SHIP OR PLANE HE SEES AND ON EVERY PICTURE OF ONE IN A MAGAZINE OR NEWSPAPER.

FRIEND

U.S.A. U.K.

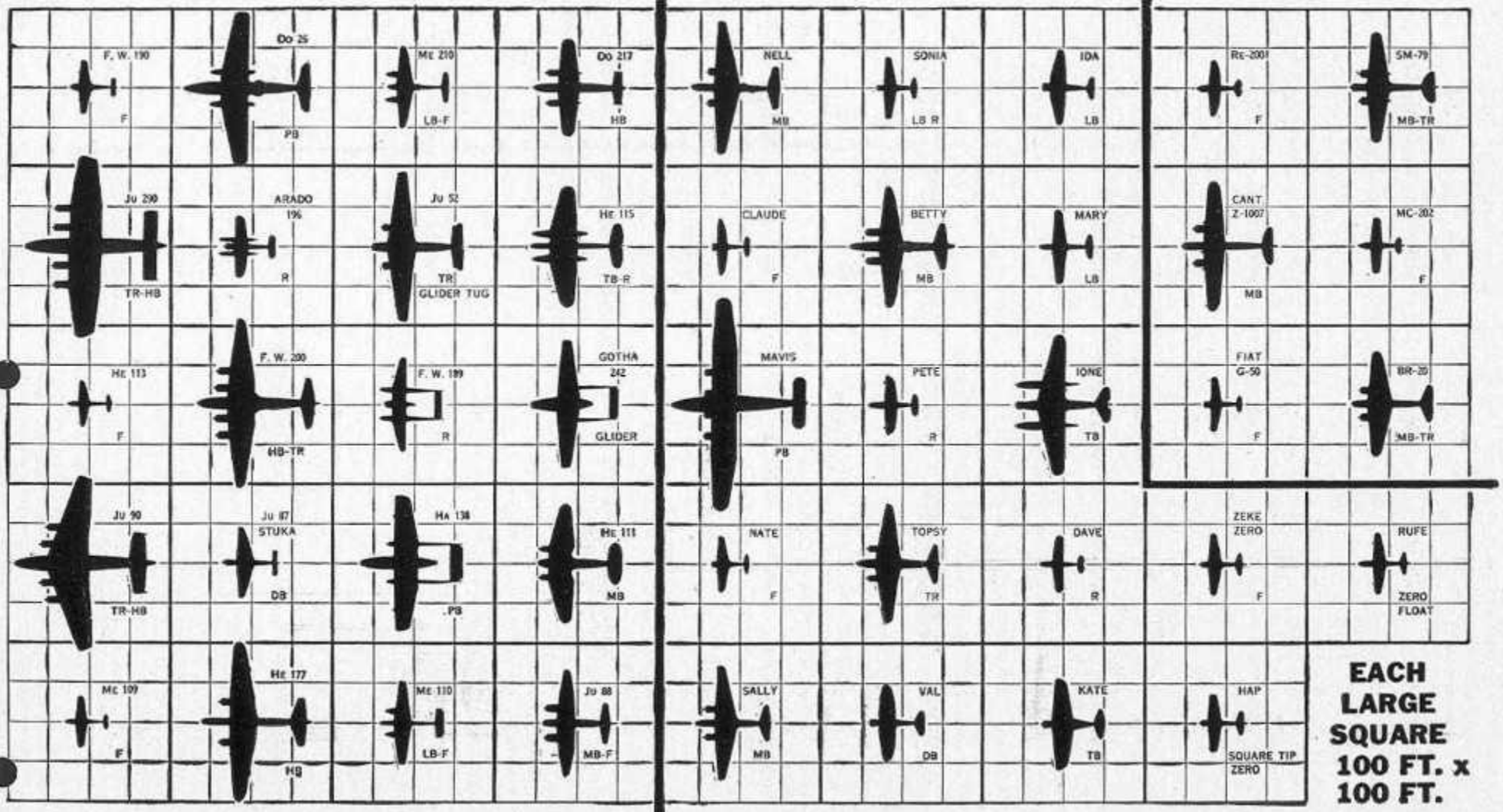


FOE

REICH

JAPAN

ITALY



EACH LARGE SQUARE 100 FT. x 100 FT.

Manufacturers of Foreign AIRCRAFT

BRITISH

"Airspeed"	Airspeed, Ltd.
"Armstrong Whitworth"	Sir W. G. Armstrong Whitworth Aircraft, Ltd.
"Blackburn"	The Blackburn Aircraft, Ltd.
"Boulton Paul"	Boulton Paul Aircraft, Ltd.
"Bristol"	The Bristol Aeroplane Co., Ltd.
"De Havilland"	The De Havilland Aircraft Co., Ltd.
"Fairey"	The Fairey Aviation Co., Ltd.
"Folland"	Folland Aircraft, Ltd.
"G. A."	General Aircraft, Ltd.
"Gloster"	The Gloster Aircraft Co., Ltd.
"Handley Page"	Handley Page, Ltd.
"Hawker"	Hawker Aircraft, Ltd.
"Miles"	Phillips and Powis Aircraft, Ltd.
"Percival"	Percival Aircraft, Ltd.
"Avro"	A. V. Roe and Co., Ltd.
"Saro"	Saunders-Roe, Ltd.
"Short"	Short Bros. (Rochester and Bedford) Ltd.
"Supermarine"	Supermarine Aviation Works, Div. of Vickers-Armstrongs, Ltd.
"Vickers"	Vickers-Armstrongs, Ltd.
"Westland"	Westland Aircraft, Ltd.
"Wackett"	Commonwealth Aircraft Corporation Pty., Ltd. (Australia).
"Fleet"	Fleet Aircraft, Ltd. (Canada).
"Noorduyn"	Noorduyn Aviation, Ltd. (Canada).

U. S. S. R.

State aircraft factories, grouped under control of the Central Directorate of Aeronautical Industry (Glavavioprom).

JAPAN

"Aichi"	Aichi Watch and Electric Machinery Co., Ltd.
"Kawanishi"	Kawanishi Aircraft Co., Ltd.
"Kawasaki"	Kawasaki Aircraft Engineering Co., Ltd.
"Mitsubishi"	Mitsubishi Heavy Industries, Ltd.
"Nakajima"	Nakajima Aircraft Co., Ltd.
"Sasebo"	Sasebo Naval Arsenal.

GERMANY

"Arado"	Arado Flugzeugwerke, G. m. b. H. (Arado Aircraft Co., Ltd.).
"Blohm and Voss" (or "Ha")	Blohm und Voss
"Bücker"	Bücker Flugzeugbau, G. m. b. H. (Bücker Aircraft Co., Ltd.).
"Dornier"	Dornier-Werke, G. m. b. H. (Dornier Industries Co., Ltd.).
"Fieseler"	Gerhard Fieseler Werke, G. m. b. H. (Gerhard Fieseler Industries Co., Ltd.).
"Focke-Wulf"	Focke-Wulf Flugzeugbau, G. m. b. H. (Focke-Wulf Aircraft Co., Ltd.).
"Gotha"	Gothaer Waggonfabrik, A. G. (Gotha Vehicle Manufacturing Corp.).
"Heinkel"	Ernst Heinkel Flugzeugwerke, G. m. b. H. (Ernst Heinkel Aircraft Co., Ltd.).
"Henschel"	Henschel Flugzeugwerke, A. G. (Henschel Aircraft Corp.).
"Junkers"	Junkers Flugzeug und Motorenwerke, A. G. (Junkers Aircraft and Engine Corp.).
"Messerschmitt"	Messerschmitt, A. G. (Messerschmitt Corp.).

ITALY

"Breda"	Societa Italiana Ernesto Breda. (Ernest Breda Co. of Italy.)
"Cant"	Cantieri Riuniti dell' Adriatico. (Adriatic United Shipyards.)
"Caproni"	Aeroplani Caproni S. A. (Caproni Airplanes Co., Ltd.).
"Caproni Vizzola"	Caproni Vizzola S. A. (Caproni). (Caproni Vizzola Co., Ltd. (Caproni).)
"Fiat"	Aeronautica d'Italia S. A. (Fiat). (Italian Aircraft Co., Ltd. (Fiat).)
"Macchi"	Aeronautica Macchi S. A. (Macchi Aircraft Co., Ltd.).
"Meridionali"	S. A. Industrie Meccaniche & Aeronautiche Meridionali (Breda). (Southern Manufacturing and Aircraft Co., Ltd. (Breda).)
"Piaggio"	S. A. Piaggio & Co. (Piaggio Co., Ltd.).
"Reggiane"	Officine Meccaniche "Reggiane" S. A. (Caproni). (Reggio Manufacturing Works, Ltd. (Caproni).)
"S. A. I."	Societa Aeronautica Italiana Ing. A. Ambrosini & Co. (A. Ambrosini Aeronautical Engineering Co. of Italy).
"Savoia-Marchetti"	Societa Italiana Aeroplani Idrovolanti "Savoia-Marchetti." ("Savoia-Marchetti" Airplane and Seaplane Co. of Italy.)

ARMY

The designation of Army aircraft is composed of one or two letters designating the class of aircraft, a number indicating the model and a letter to designate the modification of the model. For example the designation B–17F means that the aircraft is a bomber (B), that it is the 17th bomber model accepted by the Army, and that it is the 6th modification of the B–17 model. Unlike U. S. Navy aircraft designations, Army designations give no information as to identity of the manufacturer.

OA	Amphibian
F	Army Reconnaissance (Photographic)
A	Bombardment (Light)
B	Bombardment (Medium and Heavy)
P	Fighter
L	Liaison
O	Observation
AT	Training (Advance)
BT	Training (Basic)
PT	Training (Primary)
C	Transport (Cargo and Personnel)
UC	Utility Transport (Less than 9 places or less than 1,400 lbs. of cargo)
CG	Glider (Troop)
TG	Glider (Training)
CQ	Target (Control)
OQ	Target (Aerial)
PQ	Target (Aerial)

Classifications are prefixed as follows:

R	Restricted Classification (Planes no longer considered as First Line aircraft)
X	Experimental Classification
Y	Service Test Classification
Z	Obsolete Classification

NAVY

The designation of Navy airplanes, airships, and gliders is composed of one or two letters designating the class of aircraft; a number indicating the model; a letter indicating the manufacturer; and a number to designate the modifications of the model. As an example, the first patrol bombing aeroplane to be produced by Consolidated Aircraft would be the PBY–1. The modifications to this aircraft would be the PBY–2, PBY–3, etc. The second patrol bombing aeroplane built by this company would be the PB2Y–1 and successive modifications to this aeroplane would be the PB2Y–2, PB2Y–3, etc. The prefix letter "X" is used for experimental aircraft and gliders.

H	Ambulance
B	Bombing
F	Fighting
O	Observation
P	Patrol
S	Scouting
T	Torpedo
OS	Observation-Scouting
N	Training
R	Transport (multi-engine)
G	Transport (single-engine)
J	Utility
BT	Bombing Torpedo
PB	Patrol-Bombing
SB	Scouting-Bombing
JR	Utility-Transport
L	Glider
ZN	Airship (nonrigid)
SO	Scouting-Observation
SN	Scout-Training
TB	Torpedo-Bombing

NAMES of U. S. Planes

NOTE: NOT ALL THESE ARE REPRESENTED IN THIS MANUAL

	ARMY	NAVY AND MARINE CORPS	NAME	ORIGINAL MANUFACTURER
SCOUTING OBSERVATION (SEAPLANES)	. . . . .	SO3C	Seagull	Curtiss
	. . . . .	OS2U	Kingfisher	Chance Vought
TRANSPORT	C-43	GB	Traveler	Beech
	C-45A	JRB	Voyager	Beech
	C-46	R5C	Commando	Curtiss
	C-47	R4D	Skytrain	Douglas
	C-53		Skytrooper	Douglas
	C-54	R5D	Skymaster	Douglas
	C-60 (C-56, C-57, C-59) .	R5O	Lodestar	Lockheed
	C-61	GK	Forwarder	Fairchild
	C-69	. . . . .	Constellation	Lockheed
	C-76	. . . . .	Caravan	Curtiss
	C-87	. . . . .	Liberator Express	Consolidated
	. . . . .	JR2S	Excalibur	Chance Vought
TRAINERS	PT-13 & 17	N2S-1 & 3 . .	Caydet	Boeing
	PT-19 & 23	. . . . .	Cornell	Fairchild
	. . . . .	N2T	Tutor	Timm
	PT-22	NR	Recruit	Ryan
	BT-13 & 15	SNV	Valiant	Vultee
	AT-6	SNJ	Texan	North American
	. . . . .	SNC	Falcon	Curtiss
	AT-7	SNB-2	Navigator	Beech
	AT-8 & 17	. . . . .	Bobcat	Cessna
	AT-10	. . . . .	Wichita	Beech
	AT-11	SNB-1	Kansas	Beech
	AT-13 & 14	. . . . .	Yankee-Doodle	Fairchild
	AT-15	. . . . .	Crewmaker	Boeing
	AT-19	. . . . .	Reliant	Vultee
LIAISON	L-1	. . . . .	Vigilant	Vultee
	L-2	. . . . .	Taylorcraft Grasshopper	Taylorcraft
	L-3C	. . . . .	Aeronca Grasshopper	Aeronca
	L-4B	NE	Piper Grasshopper	Piper
	L-5	. . . . .	Sentinel	Vultee

NAMES of U. S. Planes

NOTE: NOT ALL THESE ARE REPRESENTED IN THIS MANUAL

ARMY	NAVY AND MARINE CORPS	NAME	ORIGINAL MANUFACTURER	
B-17		Flying Fortress	Boeing	HEAVY BOMBERS
B-24	PB4Y	Liberator	Consolidated	
B-18		Bolo	Douglas	MEDIUM BOMBERS
B-23		Dragon	Douglas	
B-25	PBJ	Mitchell	North American	
B-26		Marauder	Martin	
B-34	PV	Ventura	Vega	
A-20	BD	Havoc (Attack) Boston (Bomber)	Douglas	LIGHT BOMBERS
A-24	SBD	Dauntless (Dive)	Douglas	
A-25	SB2C	Helldiver (Dive)	Curtiss	
A-29	PBO	Hudson (Patrol)	Lockheed	
A-34	SB2A	Buccaneer (Dive)	Brewster	
A-35, A-31		Vengeance (Dive)	Vultee	
	SB2U	Vindicator (Dive)	Chance Vought	
	TBD	Devastator (Torpedo)	Douglas	
	TBF	Avenger (Torpedo)	Grumman	
OA-10	PBY	Catalina	Consolidated	PATROL BOMBERS (FLYING BOATS)
	PB2Y	Coronado	Consolidated	
	PBM	Mariner	Martin	
P-38		Lightning	Lockheed	FIGHTERS
P-39		Airacobra	Bell	
P-40		Warhawk	Curtiss	
P-43		Lancer	Republic	
P-47		Thunderbolt	Republic	
P-51		Mustang	North American	
	F2A	Buffalo	Brewster	
	F4F	Wildcat	Grumman	
	F4U	Corsair	Chance Vought	
	F6F	Hellcat	Grumman	

CURRENT NAVY MANUFACTURER'S LETTERS

A Brewster Aeronautical Corp.
Allied Aviation Corp.

B Beech Aircraft Co.
Boeing Aircraft Co.
Budd Manufacturing Co.

C Curtiss Airplane Div. (C-W Corp.)

D Douglas Aircraft Co., Inc.

E Bellanca Aircraft Corp.
Gould Aeronautical Corp.
Piper Aircraft Co.

F Grumman Aircraft Eng. Corp.
Columbia Aircraft Corp.
Fairchild Aircraft Corp. (Canada).

G AGA Aviation Corp.
Goodyear Aircraft Corp.
Great Lakes Aircraft Co.

H Howard Aircraft Co.
Hall Aluminum Co.

J North American Aviation.

K Fairchild Aircraft Corp. (U. S.)
Nash-Kelvinator Co.

L Bell Aircraft Corp.
Langley Aviation Corp.

M Glenn L. Martin Co.
General Motors Corp., Eastern Aircraft Division.

N Naval Aircraft Factory

O Lockheed Aircraft Corp.

P Spartan Aircraft Co.

Q Bristol Aeronautical Corp.

R Ryan Aeronautical Co.
Aeronca Aircraft Corp.

S Sikorsky Aircraft
Stearman Aircraft (Division of Boeing Aircraft Co.)
Schweizer Aircraft

T El Segundo Plant (Douglas Aircraft Co.)
Taylorcraft Aviation Corp.
Northrop Aircraft, Inc.
Timm Aircraft Corp.

U Chance Vought Aircraft (Div. United Aircraft Corp.) (formerly Vought-Sikorsky)

V Vultee Aircraft Inc.
Vickers Ltd.
Vega Airplane Co.

W Canadian Car & Foundry.
Waco Aircraft Co.

Y Consolidated Aircraft Corp.

The purpose of inserting a glossary into this manual is to enable all who use it to describe an airplane by the same terms. By no means does it pretend to be an encyclopedia of aeronautical and aerodynamical science but rather a reference page to define those visible features of any airplane by which it is most readily recognized.

AILERON—Hinged, movable portion of wing, usually at trailing edge, whose primary function is to induce a rolling motion on the airplane.
AIRFOIL—Any surface, such as an airplane wing, aileron, or rudder designed to obtain reaction from the air through which it moves.
AIR SCOOP—A scoop or hood designed to catch the air and maintain the air pressure in internal-combustion engines, ventilators, etc.
AMPHIBIAN—An airplane designed to rise from and alight on either land or water.
ANGLE OF INCIDENCE—The acute angle between the plane of the wing chord and the horizontal axis of the airplane. The angle is positive when the leading edge is higher than the trailing edge.
ARRESTER HOOK—The device lowered by a carrier based airplane to facilitate limited-space landings.
ARRESTING GEAR—The mechanism on an airplane and on the landing area used in limited-space landings.
AUTOGIRO—A type of rotor plane whose support in the air is normally derived from airfoils aerodynamically rotated about an approximately vertical axis, and whose forward speed is supplied by engine and propeller.

BALANCED SURFACE—A control surface that extends on both sides of the hinge line, or that has auxiliary extensions to effect a balance on the hinge line. Used frequently on rudders, ailerons, and elevators.
"BELLY"—Colloquial term for ventral portion of fuselage.
BIPLANE—An airplane with two wings placed one over the other.
"BLISTER"—A colloquial term for a streamlined transparent housing protruding from the fuselage, containing movable armament.
BRACING—Struts, guys, or other stiffeners used to brace any part of the structure of an airplane, externally or internally.

CABANE—An arrangement of struts.
CABIN—Compartment for one or more persons built entirely within the profile of the fuselage.
CAMBER—The curvature of an airfoil from the mean line of its chord section.
CANOPY—A hood, covering, or enclosure.
CENTER SECTION—The central panel of a wing.
CHORD—The straight line joining the leading and trailing edges of an airfoil, also called "chord length."
COCKPIT—An open space in an airplane to accommodate the pilot and/or other persons.
COWLING—A removable coveting, as over a cockpit, or around part—or all—of an engine.

DIHEDRAL ANGLE—The acute angle between the longitudinal center line of the wing and an imaginary horizontal line. When a plane has positive dihedral the wings slope "up."
DIVE BRAKE—A flap or slat which, when opened, reduces the speed of the airplane in a dive.
DORSAL—Pertaining to the back or top portion of the fuselage.

EDGE-LEADING—The entering or forward portion of an airfoil or propeller blade.
TRAILING—The after or rearmost portion of an airfoil or propeller blade.
ELEVATOR—A movable auxiliary airfoil usually hinged to the stabilizer. Its function is to induce a pitching motion on the airplane.
ENGINE—The motive power of an aircraft. "Radial" and "in-line" refer to the placement of cylinders about the propeller shaft. The former type is usually air-cooled; the latter generally liquid-cooled.

FIN—A fixed or adjustable airfoil to afford directional stability, such as a tail fin or skid fin, etc.
FLAP—A hinged or pivoted airfoil forming the rear

portion of an airfoil, used to vary the effective camber.

FLOAT—A completely enclosed watertight structure attached to an aircraft to give it buoyancy and stability when in contact with water.

FLOAT, inboard stabilizing—A stabilizing float placed relatively close to the main float or hull.

FLOAT, outboard (or wing-tip) stabilizing—A stabilizing float placed relatively far out from the main float or hull, usually at or very near the tip of the wing.

FLOAT, stabilizing (or side)—A float used in addition to a single float or hull and intended to provide lateral stability while the seaplane or flying boat is at rest on the water.

FLYING BOAT—A form of seaplane whose main body or hull provides flotation.

FUSELAGE—The body, of approximately streamline form, to which the wings and tail unit of an airplane are attached.

GAP—The distance separating two adjacent wings of a multiplane.

"GILL RING"—The adjustable after portion of the cowling of a radial engine used to effect efficient air cooling.

GLIDER—An aircraft heavier than air, similar to an airplane but without a power plant.

PRIMARY-TYPE GLIDER—A ruggedly built glider designed for use in elementary training of student glider pilots.

SECONDARY-TYPE GLIDER—A glider designed to have better aerodynamic performance than the primary type, but rugged enough for the use of pilots with limited training.

PERFORMANCE-TYPE GLIDER—A glider having a high degree of aerodynamic refinement and low minimum sinking speed.

"GREENHOUSE"—Colloquial term for the transparent canopy or hood over the cockpit.

HEIGHT—The vertical measurement of an airplane at rest; taken from the lowest point of contact to the topmost part of the airplane including the rotation arc of the propeller.

HELICOPTER—A type of rotor plane whose support in the air is normally derived from airfoils mechanically rotated about an approximately vertical axis.

HINGE LINE—The joint between a fixed and a movable surface, such as wing and aileron, stabilizer and elevator, fin and rudder.

HOOD—A covering, canopy, or cowling, usually applied to the fuselage.

HOUSING—A covering over a space used to enclose a movable part such as a retractable wheel gear.

HUB—The center portion of a propeller or wheel about which rotation occurs.

HULL, SEAPLANE—That portion of a flying boat which furnishes buoyancy when in contact with the surface of the water. It contains accommodations for the crew and passengers, usually combining the functions of both float and fuselage.

LANDING GEAR—The gear on the underside of the fuselage which supports an aircraft in take-off or landing.

LANDPLANE—An airplane which rises from and alights on land.

LENGTH (OVER-ALL)—The extreme forward-aft measurement of an airplane.

LOOP—Radio antenna formed of coils of wire.

MAST, RADIO—A fixed spar attached to an aircraft used for supporting a radio antenna.

MONOCOQUE—Term applied to fuselage construction which relies on the strength of the skin or shell for its structural stiffness. The shell is reinforced vertically by structural bulkheads.

MONOPLANE—An aircraft with a single plane or wing. There are four general types:

LOW-WING—A monoplane whose wing is located at—or near—the bottom of the fuselage.

MID-WING—A monoplane whose wing is located at approximately the midpoint between top and bottom of fuselage.

HIGH-WING—A monoplane whose wing is located at the top of the fuselage.

PARASOL-WING—A monoplane whose wing is above the top of the fuselage and is supported by a cabane or other connection.

MULTIPLANE—An airplane having two or more wings, superimposed.

NACELLE—An enclosed shelter for personnel or for a power plant. A nacelle is usually shorter than a fuselage, and does not carry the tail unit.

NOSE—The foremost part of the fuselage.

OVERHANG—(1) One half the difference in span of any two wings of an airplane. (2) The distance from the outer strut attachment to the wing tip.

PANEL (AIRPLANE)—A portion of an airplane wing constructed separately from the rest of the wing to which it is attached.

"PANTS"—Colloquial term for the housing of non-retractable landing gear struts.

PROFILE THICKNESS—The maximum distance between the upper and lower contours of an airfoil, measured perpendicularly to the mean line of the profile.

PROPELLER—Any device for propelling a craft through a fluid, such as water or air; especially a device having blades which, when mounted on a power-driven shaft, produce a thrust by their action on the fluid.

ADJUSTABLE PROPELLER—A propeller whose blades are so attached to the hub that the pitch may be changed while the propeller is at rest.

AUTOMATIC PROPELLER—A propeller whose blades are attached to a mechanism that automatically sets them at their optimum pitch for various flight conditions.

CONTROLLABLE PROPELLER—A propeller whose blades are so mounted that the pitch may be changed while the propeller is rotating.

GEARED PROPELLER—A propeller driven through gearing, generally at some speed other than the engine speed.

PUSHER PROPELLER—A propeller mounted on the rear end of the engine or propeller shaft.

TRACTOR PROPELLER—A propeller mounted on the forward end of the engine or propeller shaft.

RETRACTABLE LANDING GEAR—A type of landing gear which may be withdrawn into the body, nacelle, or wings of an airplane during flight in order to reduce parasitic drag.

RIB—A chord-wise structural member of the wing.

RING COWLING—A ring-shaped cowling placed around a radial air-cooled engine to reduce its drag and improve cooling.

ROOT—The "base" of the wing where it is attached to the fuselage.

ROTOR—The complete rotating portion of a rotary wing system.

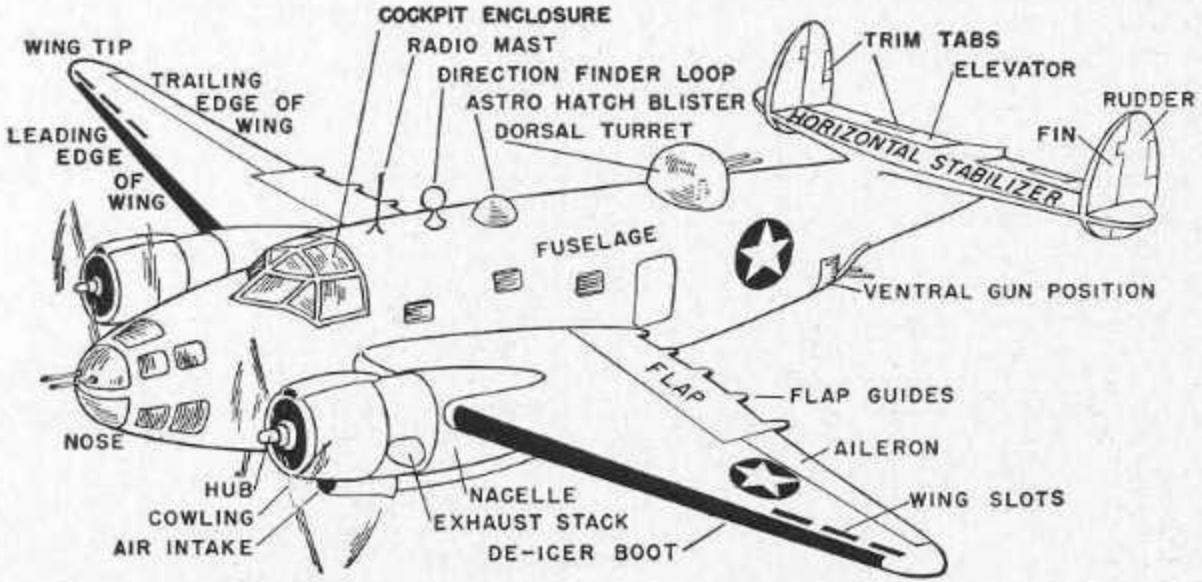
ROTOR PLANE—A form of aircraft whose support in the air is chiefly derived from the vertical component of the force produced by rotating airfoils.

RUDDER—A hinged, auxiliary vertical airfoil whose function is to induce yaw or side-to-side motion on an aircraft.

SAILPLANE—A performance-type glider.

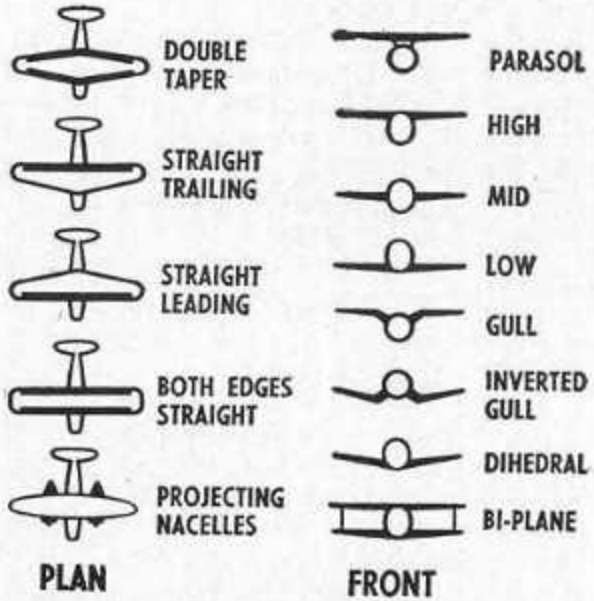
SEAPLANE—An airplane designed to rise from and alight on the water.

SESQUIPLANE—A form of biplane in which the area of one wing is less than half the area of the other.

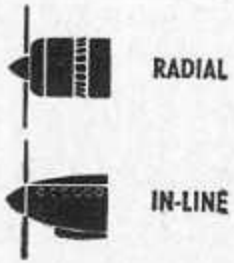


SHAFT—The part connected to the power plant which drives the propeller or rotor (of a helicopter).
SKID FIN—A fore and aft vertical surface, usually attached to the top of the wing to increase lateral stability.
SLAT—A movable auxiliary airfoil, attached to the leading edge of a wing, which when closed falls within the original contour of the main wing and which when opened forms a slot.
SLOT—The space between the "slat" and wing designed to improve the flow conditions of an airfoil.
SLOTTED AILERON—An aileron having an air passage between the nose of the aileron and the wing.
SPAN—The maximum distance from tip to tip of an airfoil.
"SPAT"—An aerodynamically designed housing to cover a nonretractable wheel.
SPINNER—A fairing of approximately conical or paraboloidal shape, which is fitted coaxially with the propeller hub and revolves with the propeller.
SPOILER—A small plate arranged to project above the upper surface of a wing to disturb the smooth air flow, with consequent loss of lift and increase of drag.
SPONSON—A protuberance from a seaplane hull designed to increase the beam or give lateral stability at rest.
SPRAY STRIP—A strip projecting from the hull of a seaplane to change the manner in which the spray is thrown.
STABILIZER—Any airfoil whose primary function is to increase the stability of an aircraft. It usually refers to the fixed horizontal tail surface of an airplane, as distinguished from the fixed vertical surface.
STABILIZER, STUB-WING—A projection from the side of the central hull of a flying boat intended to increase the buoyancy and stability of a flying boat while the boat is at rest and to increase the hydrodynamic lift during the take-off. It is an integral part of the hull, and usually takes the form of a stumpy airfoil or a stub wing.
STEP—A break in the form of the bottom of a float or hull.
STRUT—A member of a truss frame.
OLEO STRUT—A shock absorbing telescoping strut in which an oleo gear is used.
SWEEPBACK—Term applied to a wing whose leading and trailing edges are further aft at the tips than at the center.
TAB—An auxiliary airfoil attached to a control surface for the purpose of reducing the control force or trimming the aircraft.
TAIL—The after part of an airplane consisting of stabilizers, elevators, fin, and rudder.
TAIL BOOM—A spar or outrigger connecting the tail surfaces and the main supporting surfaces.
TAIL SKID—A skid for supporting the tail of an airplane on the ground.
TAIL WHEEL—A wheel for supporting the tail of an airplane on the ground.
TAPER—A gradual diminishing of the chord length or chord thickness of an airfoil.
TIP—The outermost part of an airfoil or propeller.
TURRET—A transparent movable enclosure housing armament. It may be free or power-driven. It may also be retractable.
UNDERCARRIAGE—See landing gear.
VENTRAL—The lowermost part of a fuselage.
WING—Main supporting surface or airfoil of an airplane. It can have many plan shapes, the most usual of which are:
(a) STRAIGHT—When leading and trailing edges are straight, parallel, and at right angles to the direction of flight.
(b) TAPERED—When leading and/or trailing edges are not at right angles to the direction of flight, so that wing diminishes in chord length toward the tip.
(c) ELLIPTICAL—When leading and trailing edges are elliptical in general shape.
(d) CURVED—When leading and/or trailing edge is rounded.
(e) SWEPTBACK—When the general wing shape sweeps aft toward the tips.
(f) SWEPTFORWARD—When the general wing shape sweeps forward toward the tips.
Wings are also classified by their front view shape:
a. *Horizontal*—When the wing axis forms a horizontal line.
b. *Dihedral*—When the wing axis slopes up or down from the horizontal.
c. *Gull*—When the inner panel has positive dihedral and the remainder of the wing to the tip is horizontal or has less positive dihedral.
d. *Inverted gull*—When the reverse is true, i. e., inner panel has negative dihedral and outer panel is horizontal or has positive dihedral.

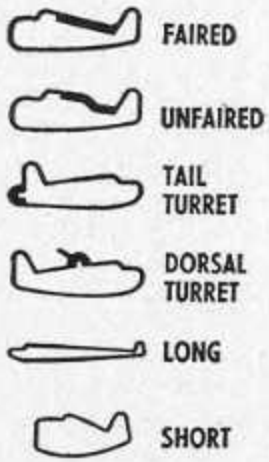
WING



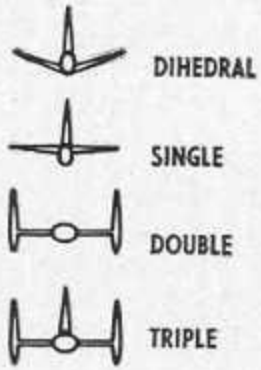
ENGINE



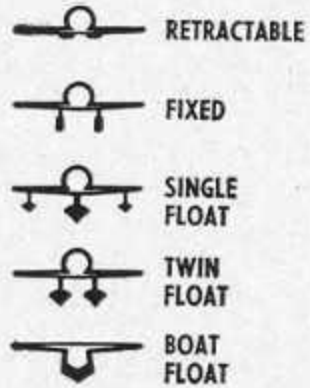
FUSELAGE



TAIL



UNDERCARRIAGE



The drawings on this page are symbolic only. They represent the main characteristics found in aircraft.

WAR DEPARTMENT,
Washington 25, 1 November 1943.

FM 30–30, Military Intelligence, Recognition Pictorial Manual, Aircraft Supplement No. 1, is published for the information and guidance of all concerned.

[A. G. 300.7 (1 Nov. 43).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

DISTRIBUTION:

D(6); B(5); R(10); Bn(5); C(10).
(For explanation of symbols see FM 21–6.)

AVIATION TRAINING DIVISION, OFFICE OF THE CHIEF OF NAVAL OPERATIONS, NAVY DEPARTMENT, WASHINGTON, D. C.
NOVEMBER, 1943.

Supplement No. 1, Navaer 00-80V-25
OPNAV 33-7-1

16—38405-1 U. S. GOVERNMENT PRINTING OFFICE

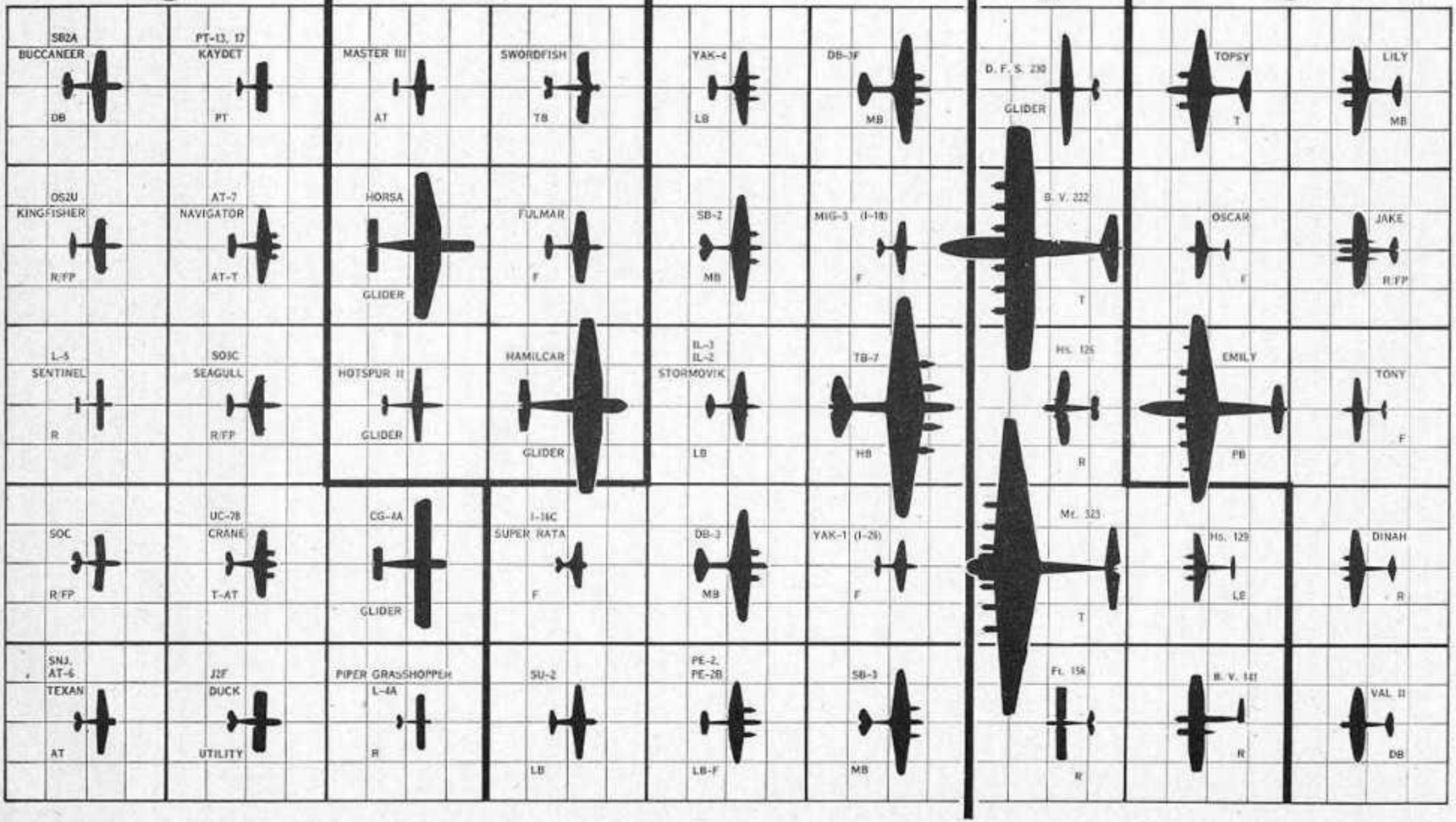
INTRODUCTION

This supplement presents currently operational combat aircraft in addition to those contained in the original publication. Included are training planes which are now employed by the Allied Nations in varying capacities in foreign theatres. Later data necessitated the revision of the original plate of "Rufe."

EACH LARGE SQUARE
100 FT. x 100 FT.

FRIEND

FOE



WAR DEPARTMENT,
Washington 25, 1 August 1944.

FM 30-30, Military Intelligence, Recognition Pictorial Manual, Aircraft Supplement No. 2, is published for the information and guidance of all concerned.

A. G. 300.7 (1 Aug. 44).

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

DISTRIBUTION:

D(6); B(5); R(10); Bn(5); C(10).

(For explanation of symbols see FM 21-6.)

AVIATION TRAINING DIVISION, OFFICE OF THE CHIEF OF NAVAL OPERATIONS, NAVY DEPARTMENT, WASHINGTON, D. C.
AUGUST, 1944.

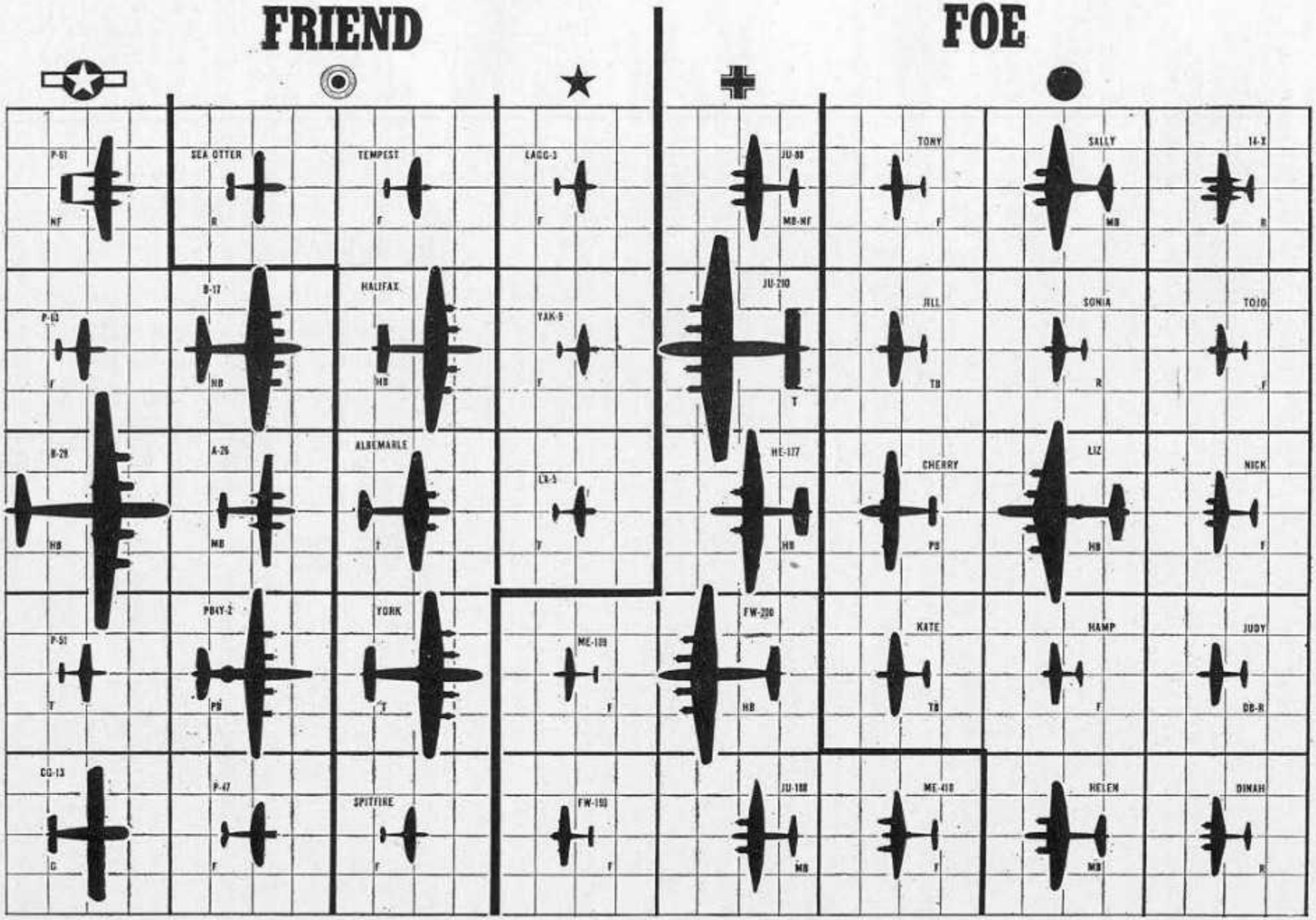
Supplement No. 2

FM 30–30
SUPPLEMENT No. 2

INTRODUCTION

This supplement presents currently operational combat aircraft in addition to those contained in the original publication and Supplement No. 1. Plates for the following aircraft have been revised:

P–47 Thunderbolt
P–51 Mustang
B–17 Fortress
Halifax
Spitfire
HE–177
FW–200
Ju–290
ME–410
ME–109 F & G
JU–88
Hamp
Kate III
Tony
Dinah



EACH LARGE SQUARE - 100 FT. x 100 FT.

WAR DEPARTMENT

Washington 25, D. C., 1 May 1945

FM 30–30, Military Intelligence, Recognition Pictorial Manual, Aircraft Supplement No. 3, is published for the information and guidance of all concerned.

[AG 300.7 (1 May 45)]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL
Chief of Staff

OFFICIAL:
J. A. ULIO
Major General
The Adjutant General

DISTRIBUTION:
AAF (10); AGF (10); ASF (2); T of Opns (10); Def Comd (10); SvC (10); D (2); B (2); R (2); Bn (2) except 44 (5); C (2) except 44 (10).
Refer to FM 21–6 for explanation of distribution formula.

"THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES, WITHIN THE MEANING OF THE ESPIONAGE ACT, 50 U. S. C., 31 AND 32, AS AMENDED.

"ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW."

AVIATION TRAINING DIVISION, OFFICE OF THE CHIEF OF NAVAL OPERATIONS, NAVY DEPARTMENT, WASHINGTON, D. C.

MAY, 1945.

Supplement No. 3, Navaer 00-80V-25
OPNAV 33-7-1

FM 30–30

SUPPLEMENT No. 3

INTRODUCTION

This supplement presents currently operational combat aircraft in addition to those contained in the original publication and Supplements Nos. 1 and 2. Plates for the following aircraft have been revised.

Halifax
Oscar
Zeke

WAR DEPARTMENT

Washington 25, D. C., 27 April 1946.

FM 30–30, Military Intelligence, Recognition Pictorial Manual, Aircraft Supplement No. 4, is published for the information and guidance of all concerned.

AG 300.7 (27 April 1946)

BY ORDER OF THE SECRETARY OF WAR:

DWIGHT D. EISENHOWER,
Chief of Staff.

OFFICIAL:

EDWARD F. WITSELL,
Major General,
The Adjutant General.

DISTRIBUTION:

AAF (10); AGF (10); ASF (2); T of Opns (10); Def Comd (10); SvC (10); D (2); B (2); R (2); Bn (2) except 44(5); C (2) except 44(10); C (National Guard) (2); G (5); ROTC (4).

OFFICE OF NAVAL INTELLIGENCE, AIR BRANCH, OFFICE OF THE CHIEF OF NAVAL OPERATIONS, NAVY DEPARTMENT, WASHINGTON 25, D. C.
APRIL, 1946.

Supplement No. 4,
AN–OPNAV–P23–100

SUPPLEMENT NO. 4
INTRODUCTION

This supplement presents currently operational combat aircraft and attempts to bring the Recognition Pictorial Manual up-to-date by deleting the aircraft which are no longer operational and by making a slight revision in the grouping of plane types by countries. Naturally there is much to be argued concerning leaving one type in and taking another type out but with the close of the war so many combat types were operational that it will take some time before the older planes, now out of production, will cease to be used. At that time they will be deleted by further supplement.

Some German, Italian, and Japanese planes have been retained pending their possible use by other countries.

German, Italian, and Swedish planes should be grouped under the new European index. Japanese planes should be grouped under the new Asiatic index. All United States Transport planes should be removed from their present groups and placed under the Transport index.

Changes should be made according to the Errata sheet. When a type plane is to be deleted all models of that type should be removed and when a type plane is to be retained only the latest model should be kept.

ERRATA SHEET

1. Remove pp. 1–17, substitute new pp. 1–18.

2. Remove indices 3 through 7 and insert new indices in the following order: (a) U.S. Transports, (b) United Kingdom, (c) U.S.S.R., (d) European, (e) Asia.

U.S. ARMY			U.S. NAVY			U.S. TRANSPORTS	
Remove	*Retain*	*Insert*	*Remove*	*Retain*	*Insert*	*Retain*	*Insert*
A–29	A–20	P–80	F4F	F6F	AD	C–46	Stratocruiser
A–30	A–26	P–82	J2F	F7F	AM	DC–3	DC–7
A–35	B–17	P–84	PV	F4U	F8F	DC–4	Constellation
UC–78	B–24		SB2A	OS2U	FR	Packet	
P–39	B–25		SBD	PV–2		C–60	
P–40	B–29		SOC	PBM			
P–63	B–32		SO3C	PBY			
	CG–4A			PB2Y			
	CG–13A			PB4Y			
	L–4			SB2C			
	L–5			SC			
	P–38			SNJ			
	P–47			TBF			
	P–61						
	AT–7,11						
	BT–13						
	PT–17,19						

3. On cover delete words "BuAer 3" and insert serial number AN-OPNAV-P23-100.

4. Remove and insert recognition plates as follows:

UNITED KINGDOM			U.S.S.R.	EUROPEAN			ASIA	
Remove	*Retain*	*Insert*	*Retain*	*Remove*	*Retain*	*Insert*	*Remove*	*Retain*
Albacore	Barracuda	Brigand	DB-3	Arado 196	DO-217	J-21	Cherry	Betty
Albemarle	Beaufighter	Firebrand	DB-3F	BV-141	FW-190	J-22	Dave	Dinah III
Beaufort	Firefly	Seafury	I-16	BV-222	He-177		Dinah	Frances
Blenheim	Halifax	Hornet	IL-3	DFS-230	JU-52		Emily	Frank
Fulmar	Lancaster	Lincoln	LA-5	DO-26	JU-88		Hap	George
Hamilcar	Meteor	Vampire	LAGG-3	FI-156	JU-188		Hamp	Irving
Hampden	Mosquito	Spiteful	MIG-3	FW-189	JU-290		Helen	Jack
Horsa	Sea Otter		PE-2	FW-200	ME-109		Jake	Judy
Hotspur	Spitfire		SB-2	Gotha 242	ME-210		Jill	Myrt
Hurricane	Sunderland		SB-3	HA-139	ME-410		Kate	Norm
Master	Tempest		SU-2	He-111	RE-2001		Lily	Peggy
Stirling	York		TB-7	He-115	MC-202		Liz	Tojo
Swordfish	Whitley		YAK-1	HS-126			Mavis	Oscar
Typhoon			YAK-4	HS-129			Nate	
Wellington			YAK-9	JU-87			Nell	
				JU-90			Nick	
				ME-323			Pete	
				BR-20			Rex	
				G-50			Rufe	
				SM-79			Sally	
				Z-1007			Sonia	
							Tony	
							Topsy	

INTRODUCTION

All members of the United States Armed Forces will want and need to have at least a visual acquaintance with aircraft of the United States and the aircraft produced and flown by the nations of the world. In addition, commercial aircraft as well as military and naval aircraft which are seen on all the airways will be of military interest to those in the service, for it is a certainty that any commercial aircraft which can be used as military transports, liaison or observation planes will be pressed into those services if the need ever arises.

This manual, actually a revision of FM 30–30, BuAer 3, "Recognition Pictorial Manual," is published to serve as a pictorial guide to the important military, naval and commercial aircraft which may be seen in all parts of the globe. From time to time additional supplements and revisions will be published and distributed for insertion in the manual when production of new types of aircraft, design changes of present aircraft and discarding of old aircraft occur.

The material in this manual has been assembled and edited jointly by the Army Air Force and the Office of Naval Intelligence. The performance figures and data of United States and foreign aircraft are as exact as the intelligence sources and security classifications permit. For foreign models, the best available figures are given.

When using this manual to aid in identifying aircraft, special attention should be paid to the national insignia and license numerals and letters listed on the following pages. Any one make of aircraft will probably be used by more than one nation's air force on airlines and the nationality of an aircraft in question will be indicated only by the insignia or license displayed. Other sections of the introduction such as the glossary, manufacturers' letter designations and so on are included as an aid to understanding and recognizing the various types, models, construction and functions of the aircraft shown.

Letter Designations of U.S. AIRCRAFT

ARMY

The designation of Army aircraft is composed of one or two letters designating the class of aircraft, a number indicating the model and a letter to designate the modification of the model. For example the designation B–17F means that the aircraft is a bomber (B), that it is the 17th bomber model accepted by the Army, and that it is the 6th modification of the B–17 model. Unlike U.S. Navy aircraft designations, Army designations give no information as to the identity of the manufacturer.

OA . . . . . Amphibian
F . . . . . Army Reconnaissance (Photographic)
G . . . . . Autogyro
A . . . . . Attack, Bombardment (Light)
B . . . . . Bombardment (Medium and Heavy)
P . . . . . Fighter
R . . . . . Helicopter
L . . . . . Liaison
O . . . . . Observation
AT . . . . . Training (Advance)
BT . . . . . Training (Basic)
PT . . . . . Training (Primary)
C . . . . . Transport (Cargo and Personnel)
CG . . . . . Glider (Cargo)
TG . . . . . Glider (Training)
PG . . . . . Powered Glider
FG . . . . . Fuel Glider
BG . . . . . Bomb Glider
CQ . . . . . Target (Control)
PQ . . . . . Target (Aerial)

Classifications are prefixed as follows:

R . . . . . Restricted Classification (Planes no longer considered as First Line Aircraft)
X . . . . . Experimental Classification
Y . . . . . Service Test Classification
Z . . . . . Obsolete Classification

NAVY

Naval aircraft are divided into four types which are designated as follows:

V . . . . . Heavier-than-air (fixed wing)
K . . . . . Pilotless Aircraft
H . . . . . Heavier-than-air (Rotary wing)
Z . . . . . Lighter-than-air

The class designations of V type aircraft are as follows:

VF . . . . . Fighter (destroy enemy aircraft in the air)
VA . . . . . Attack (destroy enemy surface or ground targets)
VP* . . . . . Patrol (search for enemy)
VO . . . . . Observation (observe and direct ship and shore gunfire)
VR* . . . . . Transport purposes
VU . . . . . Utility purposes
VT . . . . . Training purposes
VG . . . . . Gliders

* May be further classified by adding HL (four engine land plane), ML (two engine land plane), HS (four engine seaplane), MS (two engine seaplane).

The class designations of K type aircraft are as follows:

KA . . . . . For attack on aircraft targets
KS . . . . . For attack on ship targets
KG . . . . . For attack on ground targets
KD . . . . . For use as target drones
KU . . . . . For utility purposes

The class designations of H type aircraft are as follows:

HH . . . . . Air Sea Rescue
HO . . . . . Observation
HT . . . . . Training
HR . . . . . Transport
HU . . . . . Utility

The class designations of Z type aircraft are as follows:

ZP . . . . . Patrol and escort
ZH . . . . . Air Sea Rescue
ZT . . . . . Training
ZU . . . . . Utility

NAVY

Model designations for each aircraft shall be made up as follows:

(a) Prefix letter—X is used to denote experimental models.

(b) Type letter—The type letter V shall be omitted in model designations, but Z, K, or H shall be used as applicable.

(c) Class (mission) letter—There shall be only one class (mission) letter in each model designation.

(d) Designer's series number—The number following the class (mission) letter indicates the order number of the designer's aircraft in the same class, except that in the first design the numeral "one" shall be omitted.

(e) Designer's letter—The letter preceding the dash indicates the designer (if another company manufactures this same aircraft the *designer's* letter and not the manufacturer's letter will still be used to identify the aircraft).

(f) Modification number—The numeral following the dash indicates the modification of the model.

(g) Suffix letter—A suffix letter shall be added only when an aircraft is modified for a special mission or with certain types of modification. Suffix letters indicate that the modification is of a permanent nature and limit or augment the primary purpose accordingly. The following is a list of suffix letters:

A . . . . . Amphibious version
B . . . . . Special armament version
C . . . . . Carrier operating version of a noncarrier aircraft
E . . . . . Special electronic version
G . . . . . Air sea rescue version
H . . . . . Hospital version
K . . . . . Target drone version
L . . . . . Search light version
M . . . . . Weather reconnaissance version
N . . . . . Night operating version
P . . . . . Photographic version
Q . . . . . Countermeasures version
R . . . . . Transport version
S . . . . . Anti-submarine version
T . . . . . Training version
W . . . . . Special search version
Z . . . . . Administrative version

No changes in accordance with the new procedure will be made in any designation of aircraft already produced or in production except that all BT aircraft will be designated A.

Example of designation:

A2D–3E . . . . . The second series, third modification of Douglas' attack plane modified as special electronic version.

CURRENT NAVY MANUFACTURER'S LETTERS

A Allied Aviation Corp.
Noorduyn Aviation Limited
Brewster Aeronautical Corp.
B Beech Aircraft Co.
Boeing Aircraft Co.
Boeing Aircraft of Canada, Ltd.
C Curtiss-Wright Corp. (Columbus Div.)
Culver Aircraft Corp.
Cessna Aircraft Corp.
D Douglas Aircraft Co., Inc. (El Segundo Div.)
Douglas Aircraft Co., Inc. (Santa Monica Div.)
Douglas Aircraft Co., Inc. (Long Beach Div.)
Radioplane Company
McDonnell Aircraft Corp.
E Gould Aeronautical Div. (Pratt, Read and Co.)
Piper Aircraft Corp.
Edo Aircraft Corp.
F Fairchild Aircraft, Ltd. (Canada)
Grumman Aircraft Engineering Corp.
G Globe Corp. (Aircraft Div.) (formerly Frankfort)
Goodyear Aircraft Corp.
H Howard Aircraft Corp.
J North American Aviation Corp. (Inglewood Div.)
K Kaiser Cargo, Inc. (Fleetwings Div.)
L Columbia Aircraft Corp.
Bell Aircraft
M General Motors Corp. (Eastern Aircraft—(Trenton Div.)
General Motors Corp. (Eastern Aircraft—(Linden Div.)
Glenn L. Martin Co.
N Naval Aircraft Factory
NAMU, Johnsville, Pa.
O Lockheed Aircraft Corp. (Factory "B")
P P-V Engineering Forum, Inc.
Q Bristol Aeronautical Corp.
Fairchild Aircraft Div. (Fairchild Corp.)
Ranger—Lark Div. (Fairchild Corp.)
R Radioplane Co.
Interstate Aircraft & Engineering Corp. (De Kalb Div.)
Aeronca Aircraft Corp.
Ryan Aeronautical Co.
S Sikorsky Aircraft (United Aircraft Corp.)
Boeing Aircraft Co. (Wichita Div.) (formerly Stearman)
Schweizer Aircraft Co.
T Northrop Aircraft Inc.
Taylorcraft Aviation Corp.
U Chance Vought Aircraft Div. (United Aircraft Corp.)
V Consolidated Vultee Aircraft Corp. (Vultee Div.)
(Formerly Vultee)
Lockheed Aircraft Corp. (Factory "A")
(Formerly Vega)
W Canadian Car & Foundry Co.
Willys-Overland
Y Consolidated Vultee Aircraft Corp. (San Diego Div.)
Consolidated Vultee Aircraft Corp. (Stinson Div.)
Consolidated Vultee Aircraft Corp. (Vultee Div.)

All nations but the United States follow a registration system adopted at Versailles in 1919, whereby each nation is assigned a one or two-letter registration symbol, the actual license of the airplane appearing as a combination of three letters with a two-letter national symbol, and four letters with a single-letter symbol (G–ABXY, CF–BEL). The United States uses the letter only as the national symbol, the license consisting of one letter following the N to signify the type of license, and number for the license itself (NC–13365).

Letter symbols and licenses appear on both sides of the fuselage, and across both panels of upper and lower wing surfaces. The United States is again an exception, applying the license only to both sides of the rudder, and to the upper right and lower left wing surfaces. Russia uses USSR or its Russian equivalent, CCCP, on fuselage and on both right and left wing panels.

CC	China
CF	Canada
CL or CM	Cuba
CN	Morocco
CP	Bolivia
CR	Portuguese Colonies
CS	Portugal
CX	Uruguay
D	Germany
EC	Spain
EI	Eire
F	France, Colonies and Protectorates, less Morocco
G	Great Britain
HA	Hungary
HB	Switzerland
HC	Ecuador
HH	Haiti
HI	Dominican Republic
HK	Colombia
HS	Siam
I	Italy
J	Japan
LB	Czechoslovakia
LG	Guatemala
LN	Norway
LV	Argentine Republic
LZ	Bulgaria
NX, NR, NC	United States of America
OB	Peru
OH	Finland
OO	Belgium
OY	Denmark
PH	Netherlands
PJ	Curacao (Netherlands West Indies)
PK	Netherlands East Indies
PP	Brazil
PZ	Suriname (Netherlands Guiana)
SE	Sweden
SP	Poland
SU	Egypt
SX	Greece
TC	Turkey
TF	Iceland
TI	Costa Rica
USSR	Russia (national letters followed by a number)
VH	Australia
VO	Newfoundland
VP, VQ, VR	British Colonies and Protectorates with the exception that after the 3 letter combination following the national symbol there is another 3 letter combination.
VT	India
XA or XB	Mexico
XH	Honduras
XT	China
XY	Burma
YA	Afghanistan
YI	Iraq
YJ	New Hebrides Condominium
YN	Nicaragua
YR	Rumania
YS	Salvador
YU	Yugoslavia
YV	Venezuela
ZK	New Zealand
ZP	Paraguay
ZS	Union of South Africa

NAMES of U.S. Planes

NOTE: NOT ALL THESE ARE REPRESENTED IN THIS MANUAL

	ARMY	NAVY AND MARINE CORPS	NAME	ORIGINAL MANUFACTURER
SCOUTING OBSERVATION (SEAPLANES)	. . . . .	OS2U . . .	Kingfisher	Chance Vought
	. . . . .	SC-1 . . .	Seahawk	Curtiss
TRANSPORT	C-43	GB	Traveler	Beech
	C-45	JRB. . . .	Voyager	Beech
	C-46	R5C. . . .	Commando	Curtiss
	C-47	R4D . . .	Skytrain	Douglas
	C-53	R4D . . .	Skytrooper	Douglas
	C-54	R5D . . .	Skymaster	Douglas
	C-60	R5O . . .	Lodestar	Lockheed
	C-61	GK	Forwarder	Fairchild
	C-64	JA	Norseman	Noorduyn
	C-69	. . . . .	Constellation	Lockheed
	C-74	. . . . .	Globemaster.	Douglas
	C-82	. . . . .	Packet	Fairchild
	C-87	RY. . . .	Liberator Express	Consolidated Vultee
	C-97	. . . . .	Stratocruiser	Boeing
TRAINERS	PT-13 & 17	N2S . . .	Caydet	Boeing
	PT-19 & 23	. . . . .	Cornell	Fairchild
	PT-22	NR	Recruit	Ryan
	BT-13 & 15	SNV . . .	Valiant	Consolidated Vultee
	AT-6	SNJ . . .	Texan	North American
	AT-7	SNB-2 . .	Navigator	Beech
	AT-11	SNB-1 . .	Kansas	Beech
	AT-19		Reliant	Consolidated Vultee
LIAISON	L-4	NE	Grasshopper	Piper
	L-5	OY	Sentinel	Consolidated Vultee
HEAVY BOMBERS	B-17	. . . . .	Flying Fortress	Boeing
	B-24	PB4Y-1 . .	Liberator	Consolidated Vultee
	. . . . .	PB4Y-2 . .	Privateer	Consolidated Vultee
	B-29	. . . . .	Superfortress	Boeing

NOTE: NOT ALL THESE ARE REPRESENTED IN THIS MANUAL

NAMES of U.S. Planes

ARMY	NAVY AND MARINE CORPS	NAME	ORIGINAL MANUFACTURER	
B–25	PBJ	Mitchell	North American	MEDIUM BOMBERS
B–26	JM	Marauder	Martin	
B–34	PV–1, 3	Ventura	Lockheed	
	PV–2	Harpoon	Lockheed	
A–24	SBD	Dauntless	Douglas	LIGHT BOMBERS
A–25	SB2C	Helldiver	Curtiss	
A–26	JD	Invader	Douglas	
	TBF	Avenger	Grumman	
	TBM	Avenger	General Motors	
	AM	Mauler	Martin	
	AD	Skyraider	Douglas	
OA–10	PBY	Catalina	Consolidated Vultee	PATROL BOMBERS (FLYING BOATS)
	PB2Y	Coronado	Consolidated Vultee	
	PBM	Mariner	Martin	
	JRM	Mars	Martin	
P–38		Lightning	Lockheed	FIGHTERS
P–47		Thunderbolt	Republic	
P–51		Mustang	North American	
P–61		Black Widow	Northrop	
P–63		Kingcobra	Bell	
P–80		Shooting Star	Lockheed	
P–82			North American	
P–84			Republic	
	F4U	Corsair	Chance Vought	
	F3A	Corsair	Brewster	
	FG	Corsair	Goodyear	
	F6F	Hellcat	Grumman	
	F7F	Tigercat	Grumman	
	F8F	Bearcat	Grumman	
	FR	Fireball	Ryan	

The purpose of inserting a glossary into this manual is to enable all who use it to describe an airplane by the same terms. By no means does it pretend to be an encyclopedia of aeronautical and aerodynamical science but rather a reference page to define those visible features of any airplane by which it is most readily recognized.

AILERON—A movable airfoil usually attached to the trailing edge of the wing and which controls the movement of the aircraft about the longitudinal axis. (Roll, bank.)

AIRFOIL—Any surface, such as an aircraft wing, aileron or rudder designed to obtain a reaction from the air through which it moves.

AIR SCOOP—A scoop or opening designed to induct air into the aircraft or its engine for some purpose such as carburetion, cooling or ventilating.

AMPHIBIAN—An aircraft designed to take off from and alight on either land or water.

ARRESTER HOOK—A retractable hook lowered by a carrier-based aircraft in order to make limited-space landings by engaging wires on the deck.

ARRESTING GEAR—The mechanism on an aircraft and on the landing area used in limited-space landings.

AUTOGIRO—A type of aircraft propelled forward by a conventional engine and propeller but supported in the air by a rotor which is aerodynamically rotated by the forward motion of the plane.

BELLY—Colloquial term for the ventral portion or underside of the fuselage.

BIPLANE—An aircraft with two wings placed one above the other.

BLISTER—A colloquial term for a streamlined transparent housing protruding from the fuselage.

CABIN—A compartment for one or more persons built entirely within the profile of the fuselage, usually entirely enclosed except for windows and/or doors.

CANOPY—A transparent hood, covering or enclosure. A BUBBLE CANOPY is a streamlined canopy projecting entirely above the top line of the fuselage and is usually made of only one or two pieces of glass or plastic.

CENTER SECTION—The central panel of a wing.

CHORD—The straight line distance between the leading and trailing edges of an airfoil; the width of an airfoil.

COCKPIT—The compartment in an aircraft to accommodate the pilot and/or other persons, usually open or covered by a movable canopy.

CONTROL SURFACE—A movable airfoil, such as aileron, elevator or rudder, which controls the movement of the aircraft.

COWLING—A removable covering, as around an engine.

DIHEDRAL—The acute angle between the lateral center line of a wing (or horizontal stabilizer) and a horizontal line. When a wing (or stabilizer) has a positive dihedral the wing "slopes up" from the root to the tip.

DIVE BRAKE—A flap or movable surface which, when extended, reduces the speed of the aircraft in a dive.

DORSAL—Adjective pertaining to the back or top portion of the fuselage.

EDGE—See "LEADING EDGE" and "TRAILING EDGE."

ELEVATOR—A movable airfoil usually attached to the stabilizer and which controls the movement of the aircraft about the lateral axis (climb and dive).

ENGINE—The motive power of an aircraft.

Conventional reciprocating engines produce forward motion by driving propellers or rotors and are divided into two basic types—RADIAL and INLINE, depending on the arrangement of the cylinders about the crankshaft. The former type is usually air-cooled, while the latter type may be either liquid-cooled or air-cooled.

Reaction engines produce forward motion by the discharge of heated gases through a nozzle and are divided into two basic types—JET and ROCKET. The former type utilizes the surrounding atmosphere to provide the thrust medium and the oxygen for its fuel combustion, while the latter type functions independently of the surrounding atmosphere, the thrust being provided by the combustion of self-contained oxygen and fuel.

Aircraft may be powered by either a reciprocating or a reaction engine or a combination of both. The word motor should not be applied to an aircraft engine, since it usually refers to one of the many small auxiliary motors in an aircraft which are used to operate pumps, flaps, landing gear, etc.

FAIRING—An auxiliary part of the exterior structure, the function of which is to reduce drag or "streamline" the aircraft.

FILLET—A fairing used at the intersection of two surfaces, such as a wing fillet installed at the junction of the wing and fuselage.

FIN—A fixed or adjustable airfoil to afford directional stability such as a tail fin or skid fin. Common name for the vertical stabilizer.

FLAP COWL—A movable section of the cowling used to control the flow of air around the engine or cowling units.

FLAP, WING—A movable section of an airfoil used to change the effect of air flow over the airfoil. Wing flaps are located along the trailing edge of the wing and are lowered during take-off and landing in order to increase the effective lift of the wing.

FLOAT—A completely enclosed watertight structure attached to an aircraft to give it buoyancy and stability when in contact with water.

FLYING BOAT—A form of seaplane whose main body or hull provides flotation.

FUSELAGE—The main body of an aircraft to which the wings and tail unit are attached.

GLIDER—An aircraft heavier than air, with wings but without a power plant. It is supported in the air essentially by forward motion produced by gliding.

PRIMARY GLIDER—A ruggedly built glider designed for use in elementary training of glider pilots

SECONDARY or UTILITY GLIDER—A glider designed to have better aerodynamic performance than the primary type, but rugged enough for the use of pilots with limited training.

HIGH PERFORMANCE GLIDER—A glider, generally called SAILPLANE, having a high degree of aerodynamic refinement and low minimum sinking speed, often used in soaring contests.

CARGO TROOP GLIDERS—Large gliders designed to carry cargo and/or troops and towed by a powered aircraft to within gliding range of the destination.

GREENHOUSE—Colloquial term for the transparent hood or canopy over the cockpit.

HEIGHT—The vertical measurement of an aircraft at rest, taken from the lowest point of contact to the topmost part of the aircraft including the rotation arc of the propeller.

HELICOPTER—A type of aircraft propelled through and supported in the air by rotating airfoils which are mechanically rotated by an engine.

HULL—The main body of a flying boat which furnishes buoyancy when in contact with the water. It contains accommodations for the crew and passengers. See ENGINE.

JET—See ENGINE.

LANDING GEAR—An assembly of wheels, struts, etc., on a landplane which give support and control to the aircraft while in contact with the ground and in take-off or landing.

CONVENTIONAL type landing gear has a tail wheel (or skid) located behind the main wheels.

TRICYCLE type landing gear has a nose wheel located ahead of the main wheels.

LANDPLANE—An aircraft designed to take off from and alight on land.

LEADING EDGE—The forward-aft measurement of an aircraft.

LENGTH (OVERALL)—The extreme forward-aft measurement of an aircraft.

LOOP—Radio antenna formed of coils of wire.

MAST, RADIO—A fixed spar attached to an aircraft to support the radio antenna.

MONOCOQUE—A type of fuselage construction which relies on the strength of the skin or outer shell for its structural stiffness. The shell is supported by crosswise frames called BULKHEADS or FORMERS. SEMI-MONOCOQUE construction is similar to monocoque except that the shell is reinforced with longitudinal stringers running perpendicular to the bulkheads.

MONOPLANE—An aircraft with a single plane or wing. There are four general types:

LOW-WING—A monoplane with the wing located at, or near, the bottom of the fuselage.

MID-WING—A monoplane with the wing located at approximately the mid-point between the bottom and the top of the fuselage. A LOW MID-WING has the wing located slightly below

this point, and a HIGH MID-WING has the wing located slightly above this point.

HIGH-WING—A monoplane with the wing located at the top of the fuselage.

PARASOL WING—A monoplane with the wing located above the fuselage and connected to it by a cabane strut or other structure.

NACELLE—A separate enclosure for an engine or equipment usually smaller than a fuselage.

NOSE—The foremost part of the fuselage.

PANEL, ACCESS—A hinged or removable door which provides access to an interior compartment of the aircraft.

INSTRUMENT—A bulkhead on which the aircraft instruments are mounted.

WING—A section of the wing which is constructed separately from the adjoining structure such as the CENTER PANEL or OUTER PANEL. On smaller aircraft the wing is often assembled in one integral panel.

PANTS (also SPATS)—Colloquial term for the fairing on fixed landing gear.

PROPELLER—Any device for propelling a craft through a fluid such as water or air; especially a device having blades which when rotated by a power-driven shaft, produce a thrust by their action on the fluid.

ADJUSTABLE—A propeller the blades of which are so attached to the hub that the pitch may be adjusted while the propeller is at rest.

AUTOMATIC—A propeller the blades of which are attached to a mechanism that automatically sets them at the optimum pitch for various flight conditions.

CONTRA-ROTATING—Two propellers mounted in tandem on the same shaft axis but geared to rotate in opposite directions. Sometimes called 'CO-AXIAL' propellers.

CONTROLLABLE—A propeller the blades of which are so mounted that the pitch may be changed while the propeller is rotating.

FULL-FEATHERING—A propeller the blades of which can be turned so as to present the least resistance to the airstream. This prevents "wind-milling" of the propeller while the engine is not operating while in flight.

PUSHER—A propeller mounted on the rear end of the engine or propeller shaft so as to "push" the plane forward.

REVERSIBLE PITCH—A propeller the pitch of which can be changed during rotation to a negative angle producing a braking effect or reverse thrust.

TRACTOR—A propeller mounted on the forward end of the engine or propeller shaft so as to "pull" the plane forward.

RADIAL—See ENGINE.

RIB—A chord-wise structural member of the wing.

ROCKET—See ENGINE.

ROOT—The "base" of the wing where it is attached to the fuselage.

ROTOR—A complete assembly of rotating airfoils as used on autogiros and helicopters, generally revolving in an approximately horizontal plane. The airfoils are called ROTOR BLADES and are attached to the ROTO HUB.

RUDDER—A movable airfoil usually attached to the fin and which controls the movement of the aircraft about the vertical axis (turn, yaw).

SAILPLANE—A high-performance type glider.

SEAPLANE—An aircraft designed to take off from and alight on water.

SHAFT—The part connected to the power plant which drives the propeller or rotor.

SLAT—A movable auxiliary airfoil, attached to the leading edge of a wing, which when closed falls within the original contour of the wing and which when opened forms a slot.

SLOT—An opening near the leading edge of a wing, either fixed or formed by a movable slat, which improves the airflow characteristics of the airfoil.

SPAN—The maximum straight-line distance from tip to tip of an airfoil such as a wing or stabilizer.

SPAT—See PANTS.

SPINNER—A fairing of approximately conical or paraboloidal shape, which is fitted co-axially with the propeller hub and revolves with the propeller.

SPOILER—A movable airfoil or plate which when opened projects above the upper surface of the wing to disturb the smooth air flow, with a consequent loss of lift and increase in drag.

SPONSON—A protuberance from a flying boat hull, often like a stub wing, designed to increase the beam and give lateral stability in the water.

SPRAY STRIP—A strip projecting from the hull or float of a seaplane to change the manner in which the spray is thrown.

STABILIZER—Any airfoil the primary function of

693473°—46—2

which is to increase the stability of the aircraft. It usually refers to the fixed horizontal tail surface of an aircraft, as distinguished from the fixed vertical surface (fin).

STEP—A break in the form of the bottom of a float or hull.

STRUT—A generic term for a structural member.

CABANE—An exterior strut connecting the wing to the fuselage, usually in parasol or high wing monoplanes.

OLEO—An oil-filled shock absorbing strut used as the main structural member of the landing gear.

SWEEPBACK—Term applied to a wing whose leading edges and trailing edges are farther aft at the tips than at the roots.

SWEEP FORWARD—When the general wing shape sweeps aft toward the tips.

TAB—An auxiliary airfoil attached to a control surface for the purpose of reducing the control force or "trimming" the aircraft.

TAIL—The after part of an aircraft generally consisting of stabilizers, elevators, fin and rudder.

TAIL SKID—A skid for supporting the tail of an aircraft on the ground.

TAIL WHEEL—A wheel for supporting the tail of an aircraft on the ground.

TAPER—A gradual diminishing of the chord or the thickness of an airfoil.

TRAILING EDGE—The after or rearmost edge of an airfoil.

TURRET—A movable enclosure housing armament. It may be manually operated or power-driven.

REMOTE CONTROL turrets are controlled from position in the aircraft some distance from the turret itself.

UNDERCARRIAGE—See LANDING GEAR.

VENTRAL—Adjective pertaining to the "belly" or bottom portion of the fuselage.

WING—Main supporting surface or airfoil of an airplane. Wings are often classified by their plan shapes, the most usual of which are:

ELLIPTICAL—When leading and trailing edges are elliptical in general shape.

STRAIGHT—When leading and trailing edges are straight, parallel and at right angles to the direction of flight.

TAPERED—When the leading and/or trailing edges are straight but not at right angles to the direction of flight, so that the wing diminishes in chord from the root to the tip.

Wings are also classified by their front-view shape:

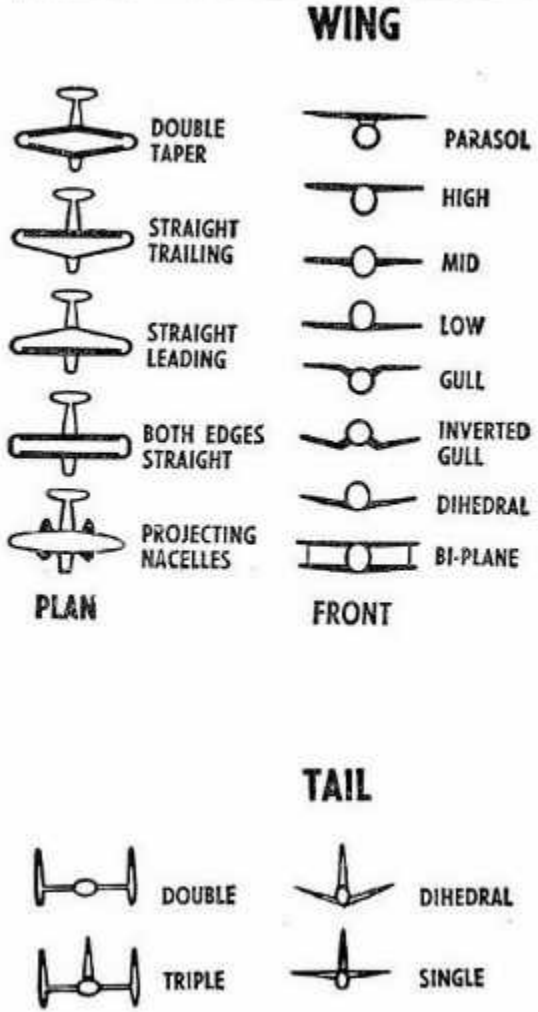
DIHEDRAL—When the wing axis slopes up (positive) or down (negative) from the root to the tip.

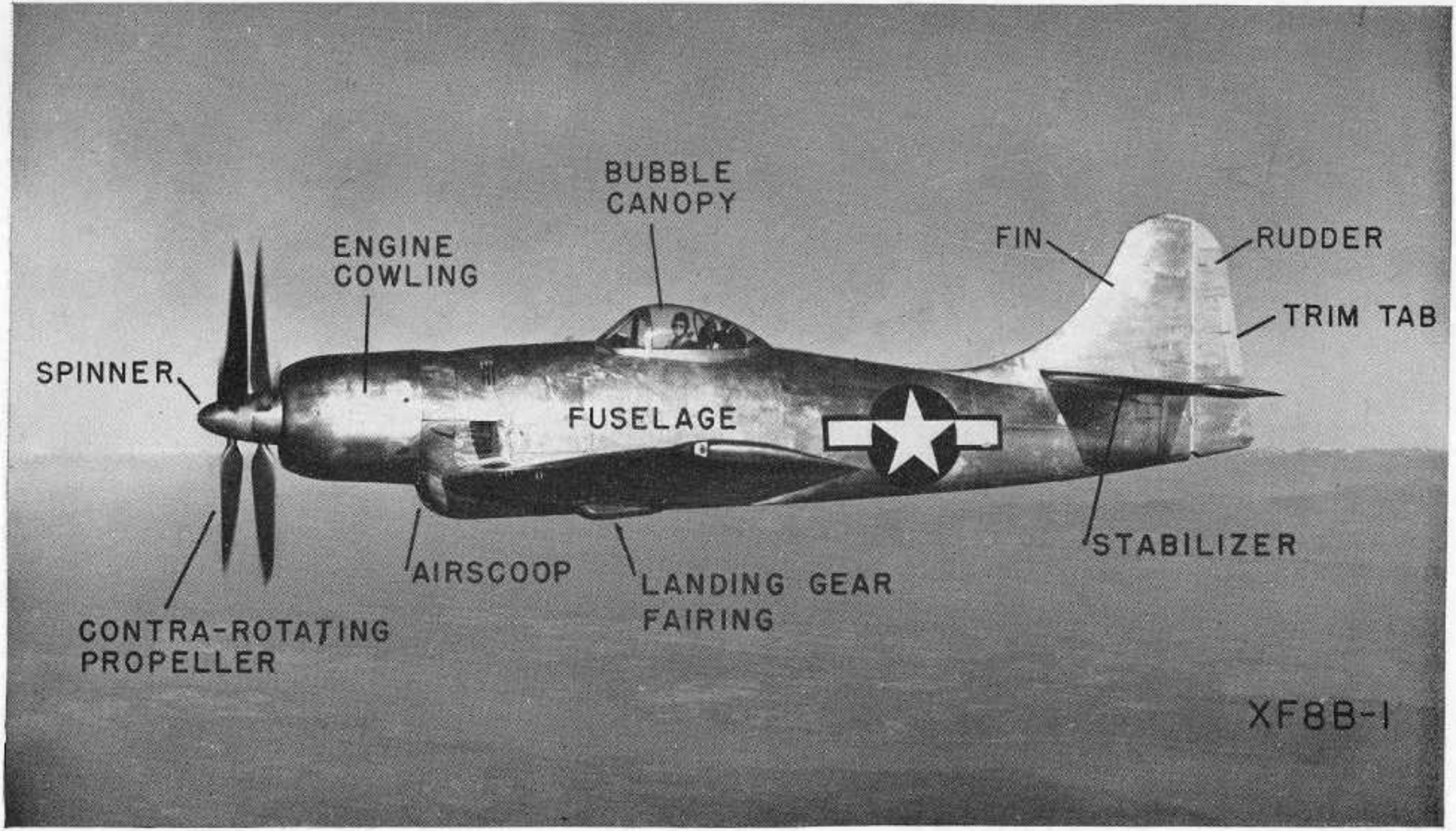
GULL—When the center panel has positive dihedral and the outer panel is horizontal or has less positive dihedral.

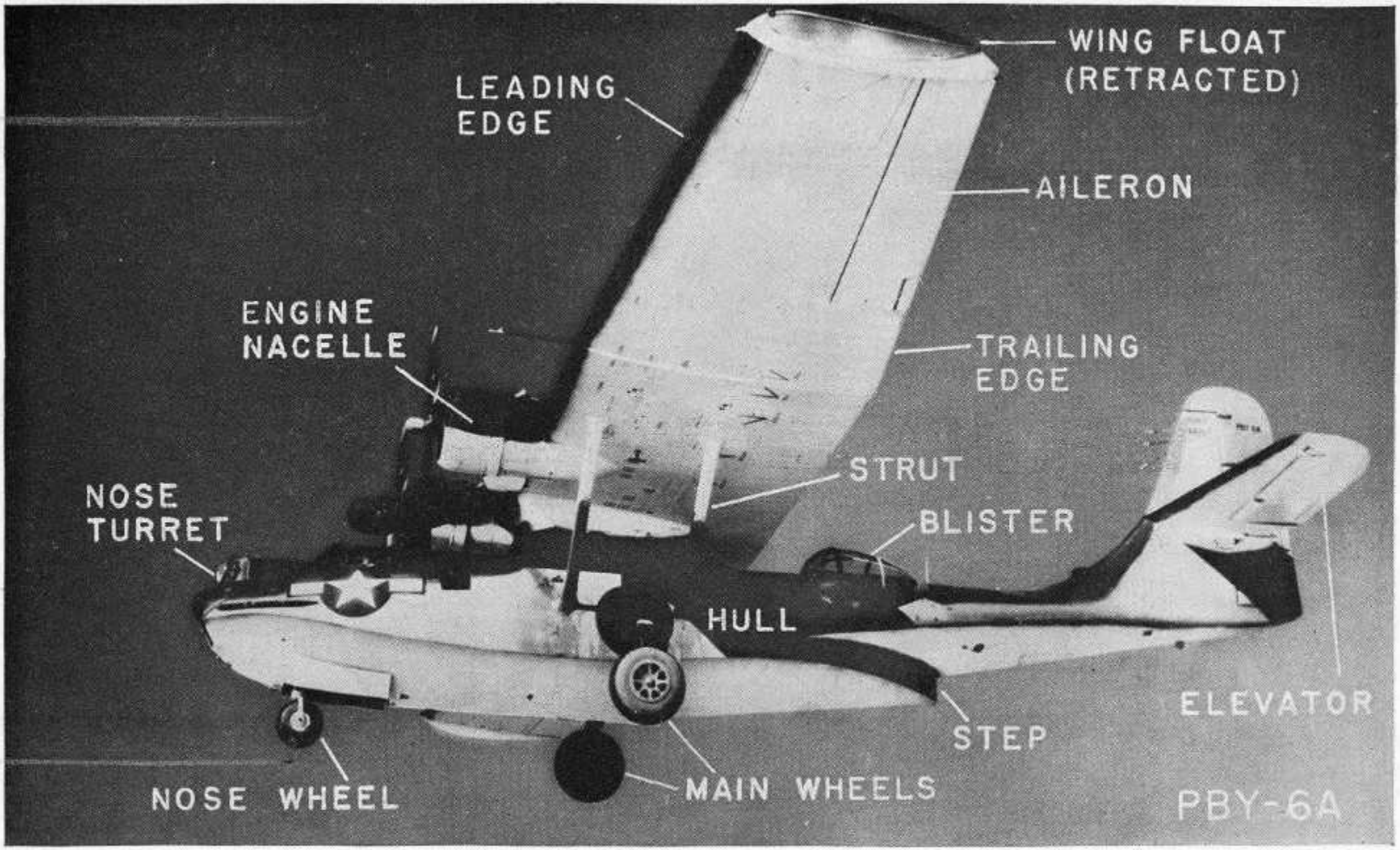
HORIZONTAL—When the wing axis forms a horizontal line.

INVERTED GULL—When the center panel has negative dihedral and the outer panel has horizontal or has positive dihedral.

WING, FLYING—A tail-less aircraft, the main body of which is an airfoil shape.

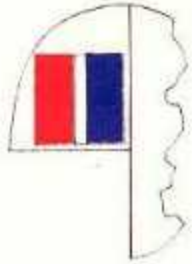



BUBBLE
CANOPY
ENGINE
COWLING
FIN
RUDDER
TRIM TAB
SPINNER
FUSELAGE
STABILIZER
AIRSCOOP
LANDING GEAR
FAIRING
CONTRA-ROTATING
PROPELLER
XF8B-1


WING FLOAT
(RETRACTED)
LEADING
EDGE
AILERON
ENGINE
NACELLE
TRAILING
EDGE
STRUT
NOSE
TURRET
BLISTER
HULL
ELEVATOR
STEP
NOSE WHEEL
MAIN WHEELS
PBY-6A

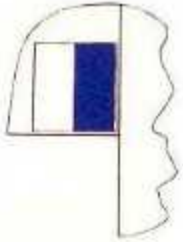
WINGS AND FUSELAGE

UNITED STATES



WINGS AND FUSELAGE FIN

GREAT BRITAIN



WINGS AND FUSELAGE FIN

GREAT BRITAIN—AUSTRALIA—NEW ZEALAND

SOUTHWEST PACIFIC AND EAST ASIA

WINGS AND FUSELAGE

RUSSIA

WINGS AND FUSELAGE

RUDDER

FRANCE

WINGS AND FUSELAGE

RUDDER

NETHERLANDS

WINGS AND FUSELAGE

ITALY

WINGS AND FUSELAGE

NETHERLANDS EAST INDIES

WINGS

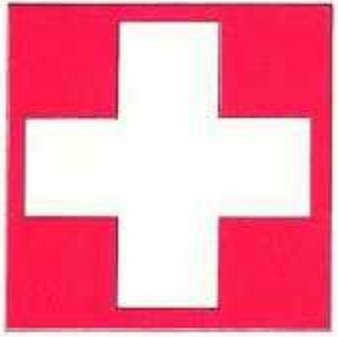
RUDDER

ARGENTINA

WINGS

RUDDER

BRAZIL



WINGS AND RUDDER

SWITZERLAND

WINGS

RUDDER

TURKEY

WINGS AND FUSELAGE

SWEDEN

WINGS AND FUSELAGE

NORWAY

WINGS

RUDDER

CHINA

WINGS

FUSELAGE

RUDDER

SPAIN

U.S.A. ARMY

U. S. ARMY AIRCRAFT

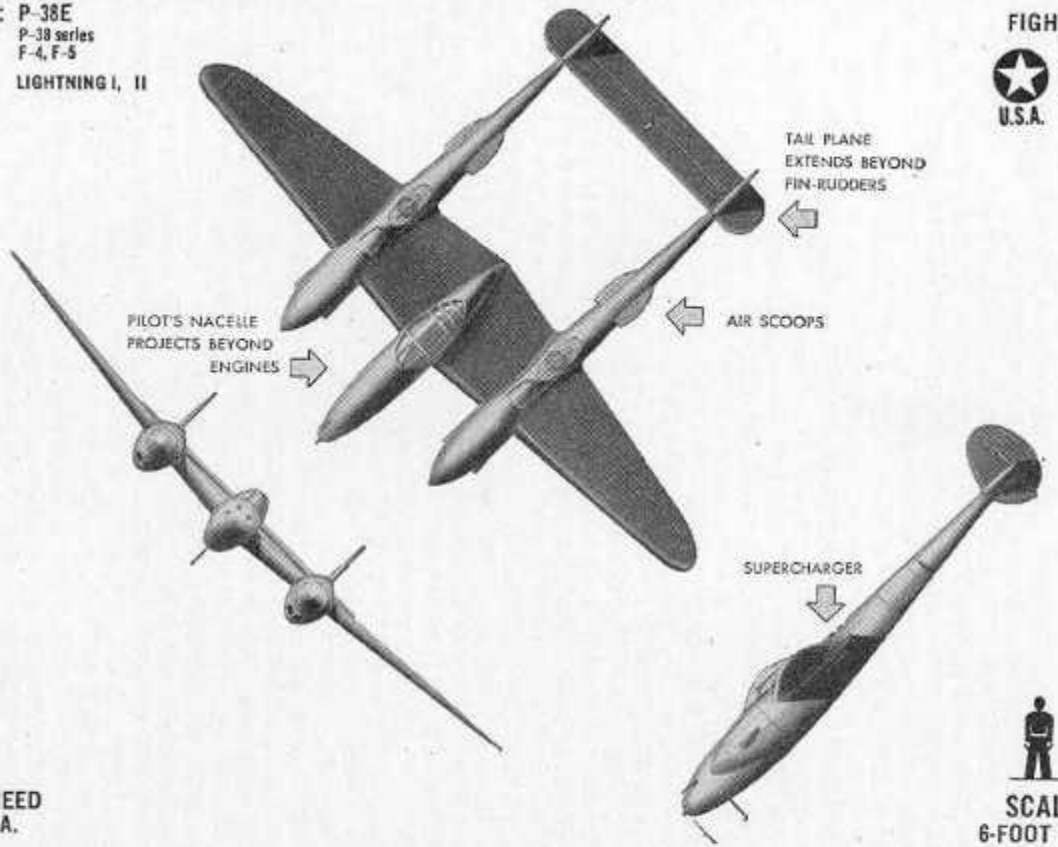
P-38 "LIGHTNING"

ARMY: P-38E
P-38 series
F-4, F-5

R. A. F.: LIGHTNING I, II

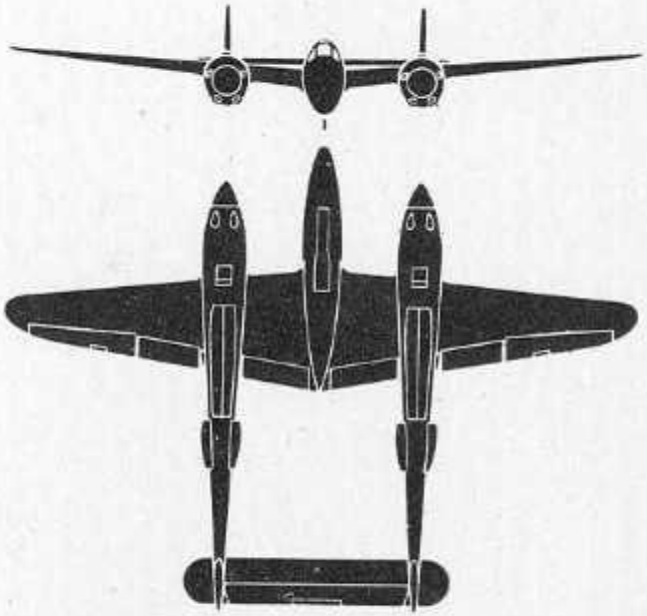
FIGHTER

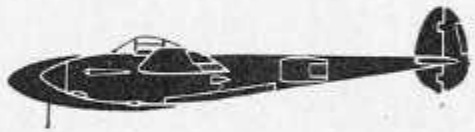
U.S.A. U.K.



LOCKHEED
U. S. A.

SCALE
6-FOOT MAN





DISTINGUISHING FEATURES: Twin-engine, mid-wing monoplane. Pilot's central nacelle projects well forward to rounded nose. Sharper taper on trailing edge of wings. Full dihedral from the roots. In-line engines mounted in nacelles at forward ends of twin tail booms extending from motors to stabilizer. Air scoops for radiators fitted on sides of booms halfway back. Stabilizer is long and rectangular with rounded tips extending outboard of the booms. Twin fins and rudders are egg-shaped.

INTEREST: In addition to speed, range, and excellent high altitude performance, versatility is an outstanding characteristic of this aircraft. In the Aleutians, in the South Pacific, in Europe and in North Africa, it has been in use both as a low and high altitude fighter and as a photographic reconnaissance aircraft (in latter case, designated as F-4 and F-5). The fact that its propellers rotate in opposite directions, thus balancing torque, enhances maneuverability of the P-38. With its twin tail booms, the Lightning is one of the easiest aircraft to recognize.

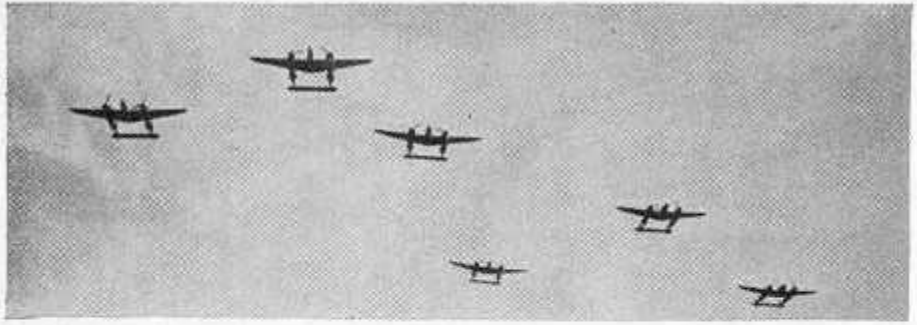
SPAN: 52 ft.
LENGTH: 37 ft. 10 in.
APPROX. MAX. SPEED: over 400 m. p. h.
SERVICE CEILING: over 30,000 ft.

APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

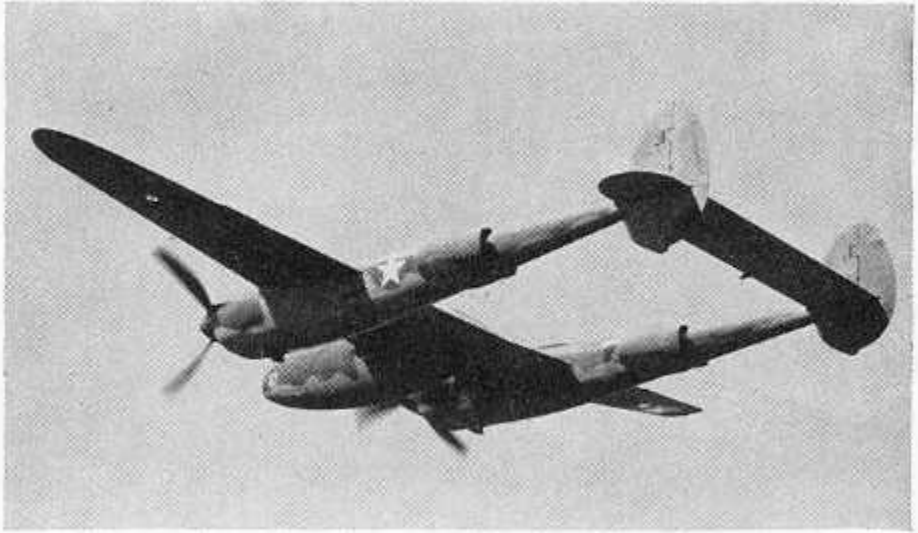
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

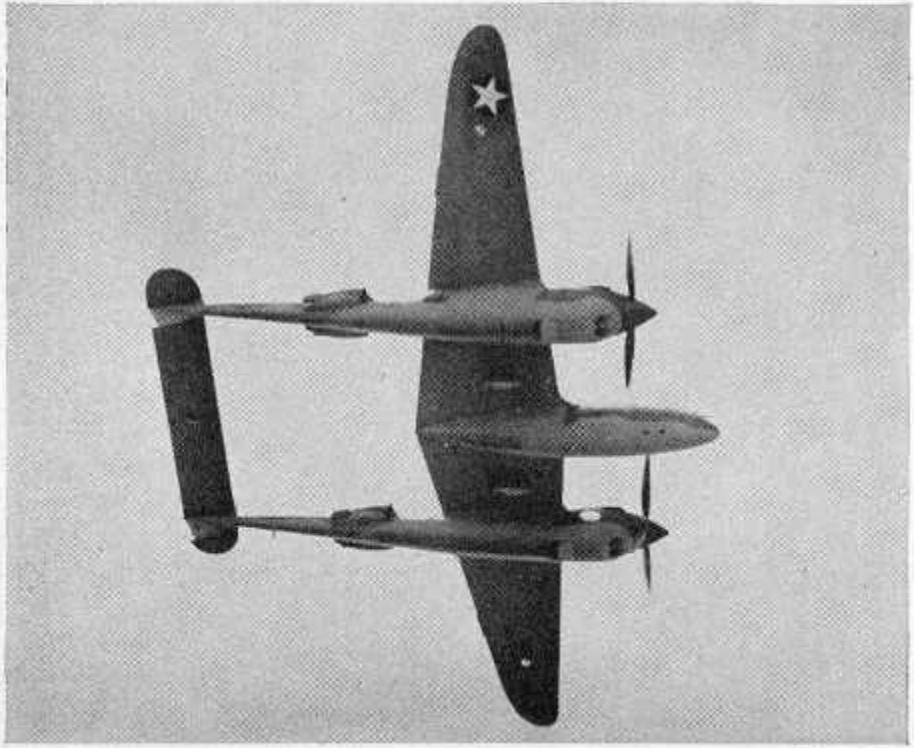
RESTRICTED

A

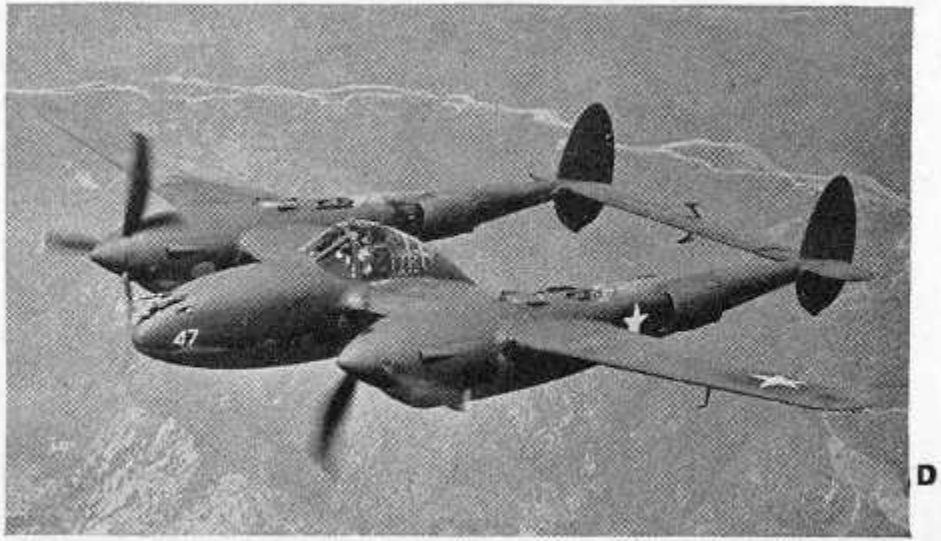


C





B

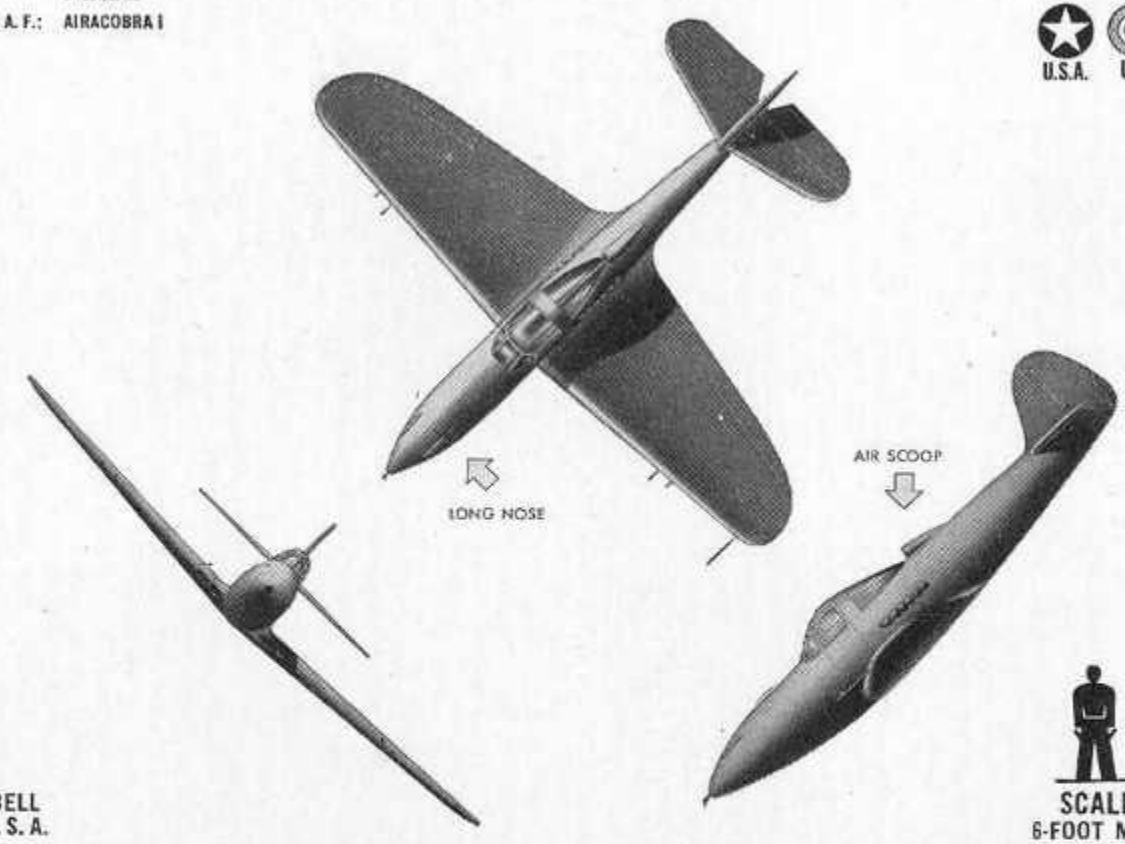


D

ARMY: P-39E
P-39 series
R. A. F.: AIRACOBRA I

FIGHTER

U.S.A. U.K.



SCALE
6-FOOT MAN

BELL
U. S. A.

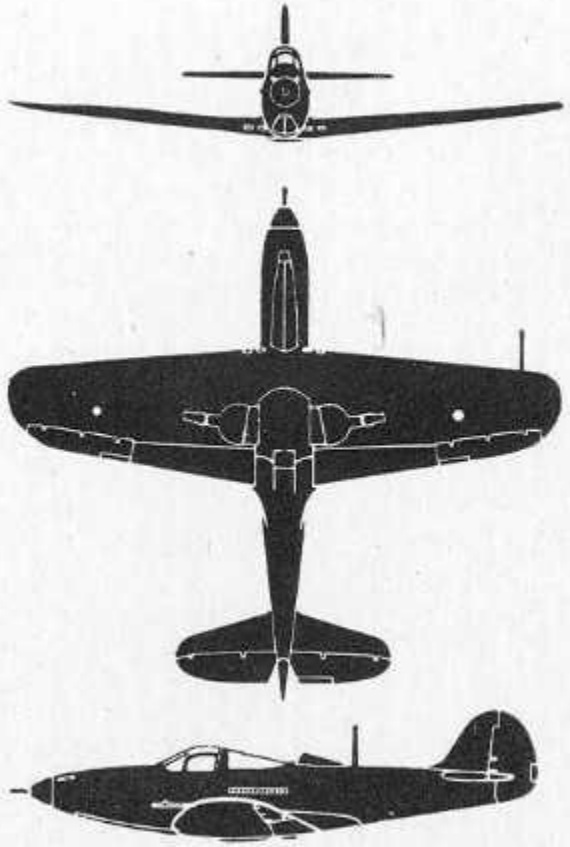
DISTINGUISHING FEATURES: Low-wing monoplane with dihedral from wing roots. Wing is set midship. Slight taper on leading edge and sharper taper on trailing edge. Long thin nose covering cannon which fires through spinner. Airscoop is directly behind pilot. Long slim fuselage. Small fin and rudder with tapered leading edge and rounded trailing edge. Entire fuselage is curved giving plane a graceful rocker effect.

INTEREST: This aircraft, rated among the most graceful airplanes in the air today, often mounts a 37-mm cannon, the heaviest carried by any aircraft of similar type. The P-39 has been used effectively for ground strafing, and as a low altitude fighter. Heavy defensive armor protects the pilot against ground fire when operating at low altitudes. The engine is placed amidship in the fuselage behind the pilot's cockpit, the propeller being driven by a 10-foot shaft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

P-39 "AIRACOBRA"



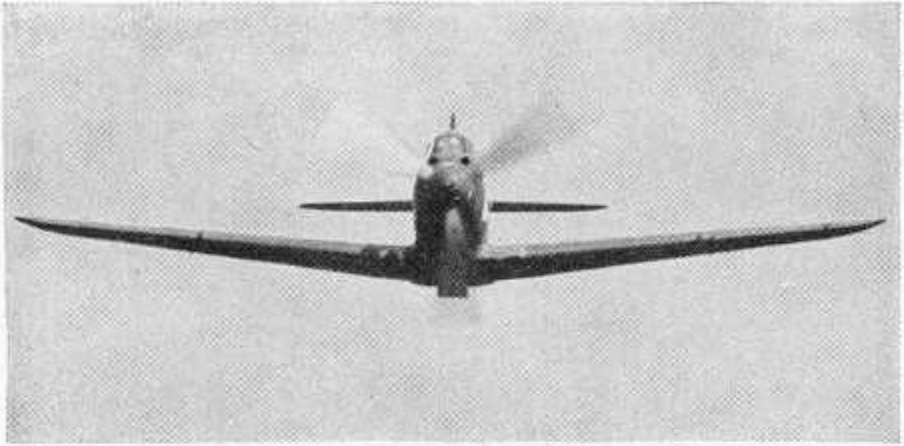
SPAN: 34 ft.
LENGTH: 30 ft. 2 in.
APPROX. MAX. SPEED: over 360 m p. h.

SERVICE CEILING:
over 30,000 ft.

RESTRICTED

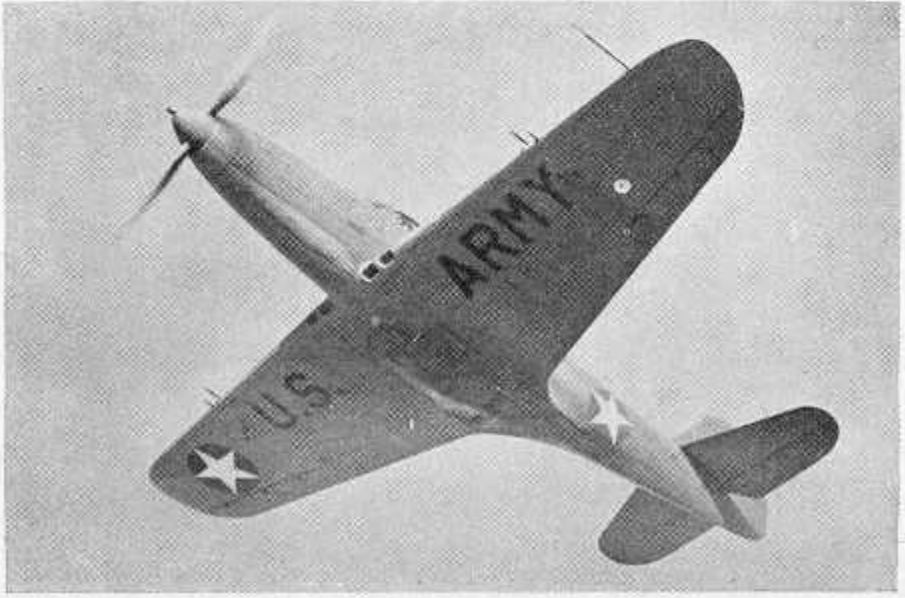
A

C



B

D



P-40 "WARHAWK"

ARMY: P-40F
P-40 series

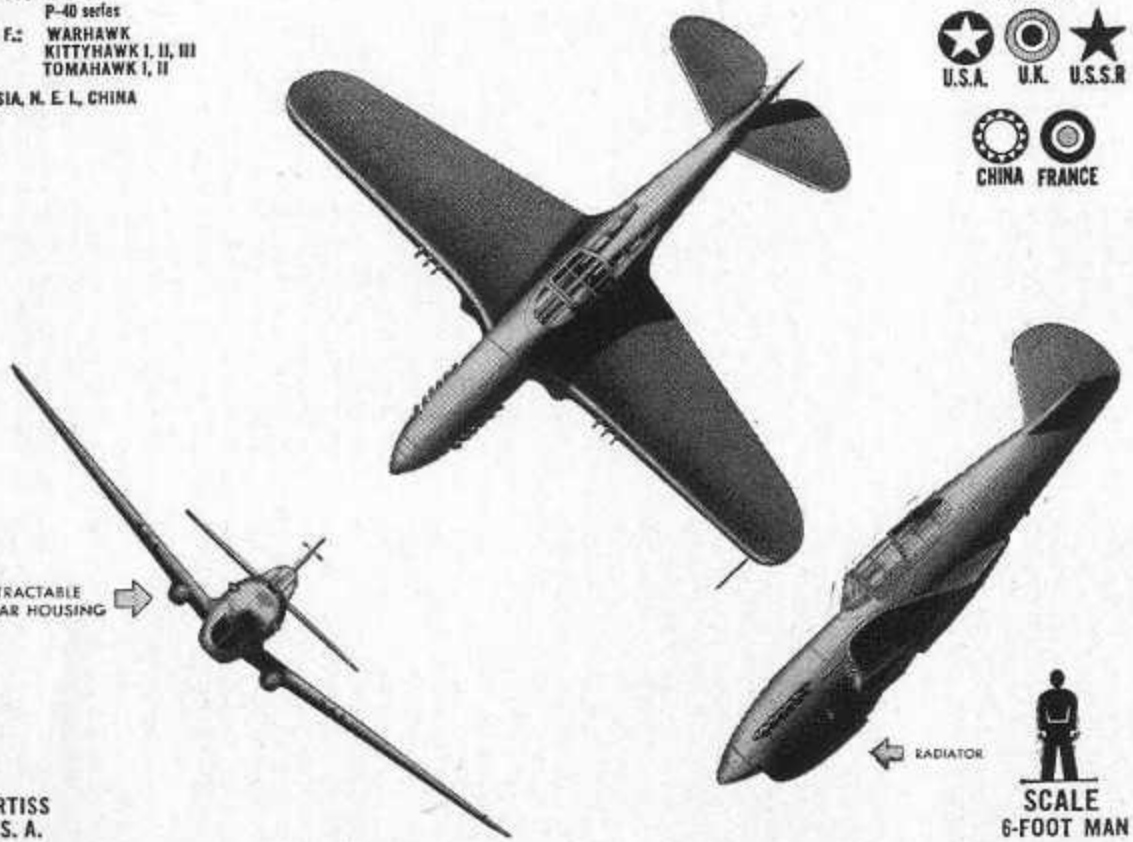
R. A. F.: WARHAWK
KITTYHAWK I, II, III
TOMAHAWK I, II

RUSSIA, N. E. I., CHINA

FIGHTER

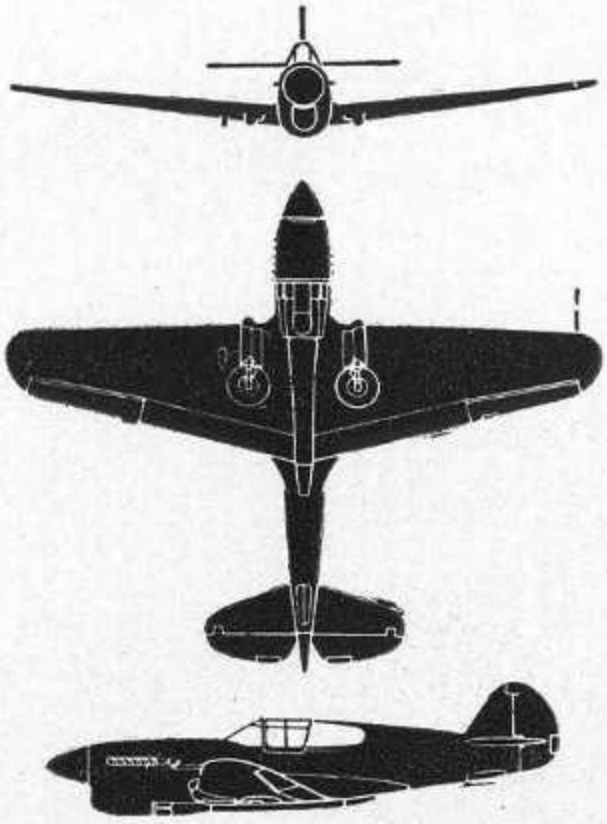
U.S.A. U.K. U.S.S.R

CHINA FRANCE



SCALE
6-FOOT MAN

CURTISS
U. S. A.



SPAN: 37 ft. 4 in.
LENGTH: 31 ft. 9 in.
APPROX. MAX. SPEED: 360 m. p. h.

SERVICE CEILING:
over 30,000 ft.

DISTINGUISHING FEATURES: Single-engine, low-wing monoplane. Wings have full dihedral showing prominent landing gear knuckles close to fuselage on lower surface. Leading edge nearly straight. Trailing edge has pronounced taper. In-line engine with deep radiator under long nose. Large spinner is set flush with cowling. Rounded fin and rudder. Large "cut-out" in elevators.

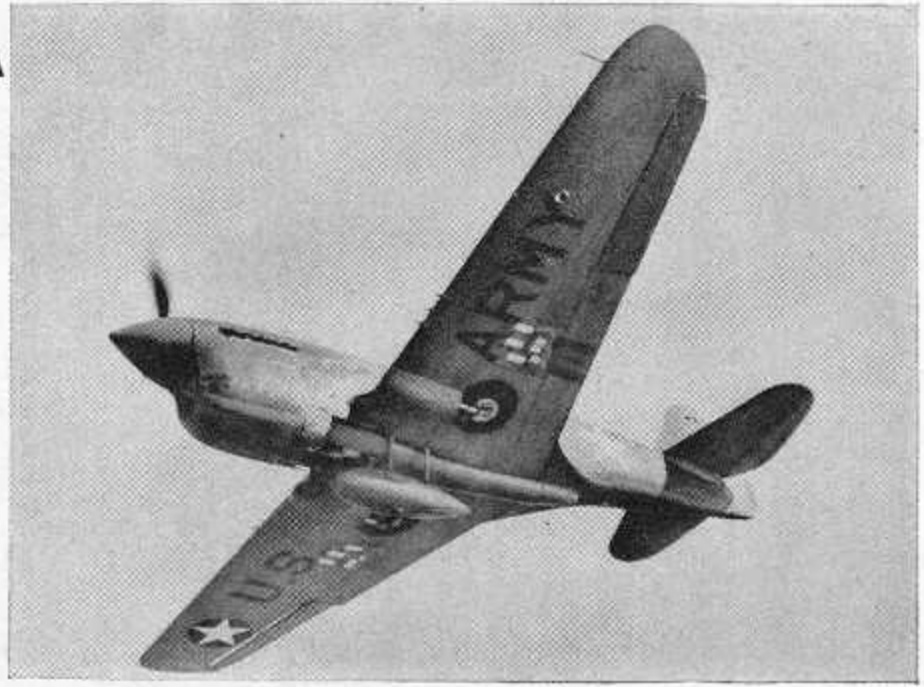
INTEREST: This is one of the best known and most widely used American fighters. Earlier models, called "Tomahawks" and "Kittyhawks" by the British were used in Libya, on the Russian front, and by the "Flying Tigers" in China. The Warhawk is the first American aircraft to be equipped with the famous Merlin engine. This fighter has excellent armor, high diving speed, good maneuverability, and heavy hitting power. Although the P-40 is not at its best in higher altitudes, it is one of the most versatile of aircraft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

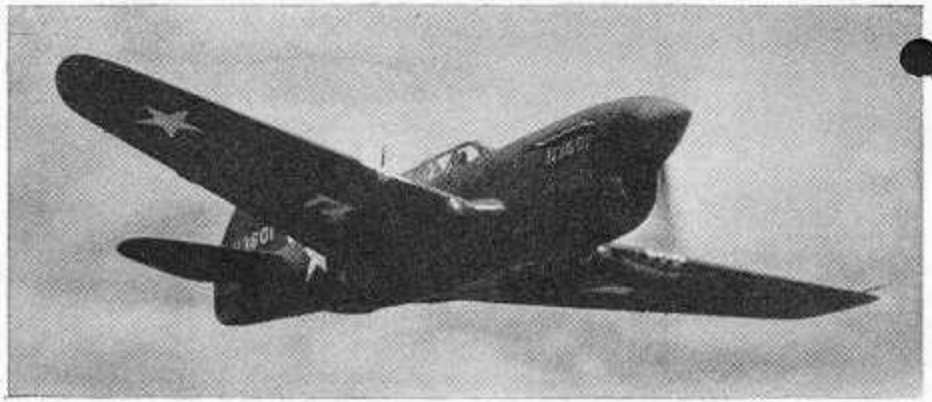
RESTRICTED

A

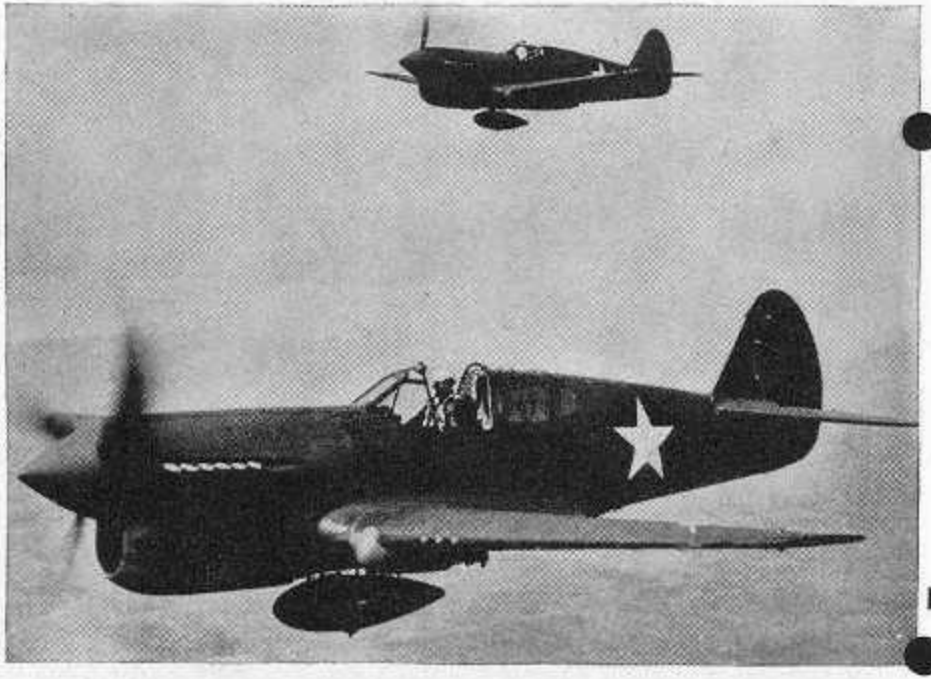


B

C



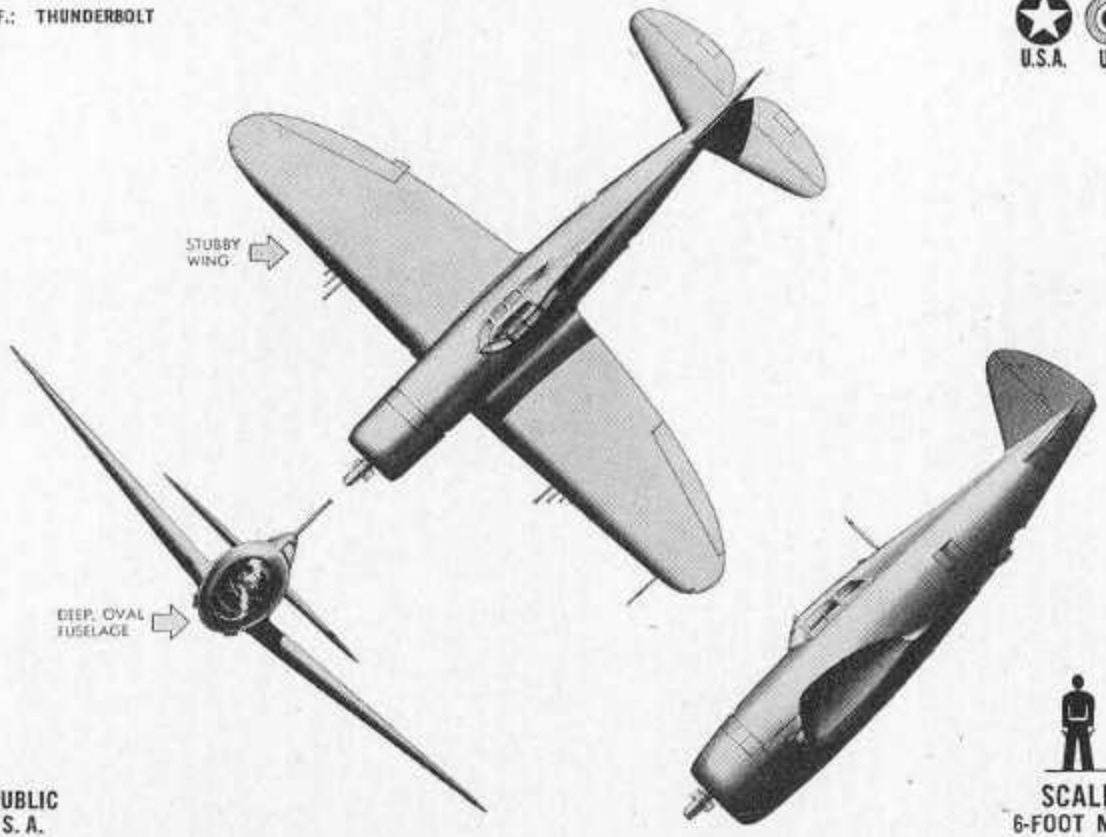
D



ARMY: P-47D
P-47 series
R. A. F.: THUNDERBOLT

FIGHTER

U.S.A. U.K.



REPUBLIC
U. S. A.

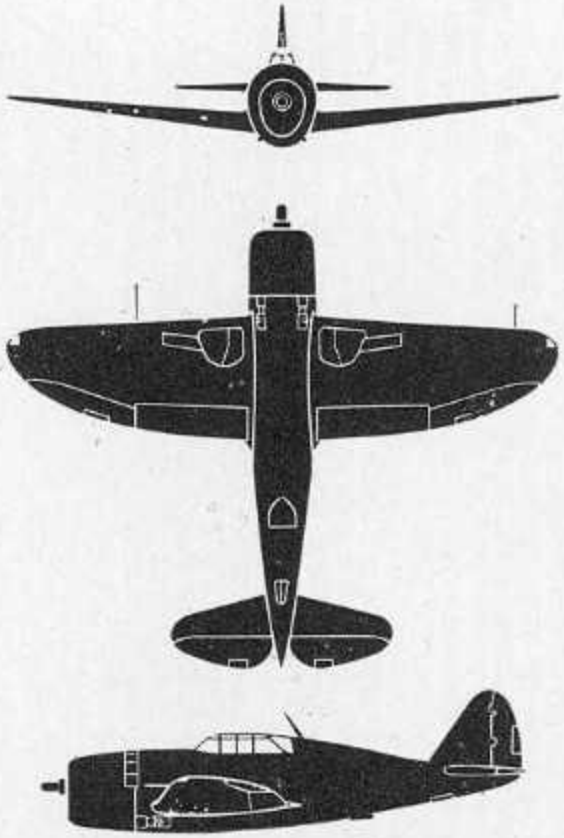
SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Low mid-wing monoplane with single radial engine. Wing has slightly tapered edge and semi-elliptical trailing edge. Wings have full dihedral from roots. Engine cowl is oval-shaped with propeller hub set above center. Fuselage has thick heavy appearance with sharp ridge down sloping back. Single fin and rudder with pronounced taper on leading edge and curved trailing edge.
INTEREST: The P-47 is one of the largest and fastest single engine fighters yet built. Its weight of over 5 tons, with nearly a ton of guns and ammunition, is greater than that of many commercial transports of a few years ago. Designed in 1941, this was the highest horsepower single engine fighter yet produced for the Army Air Forces. Use of a four-blade propeller reduces the size of the propeller arc, while still coping with the engine's great power output. This aircraft was designed for fighting at high altitudes.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-35
NAVY DEPARTMENT BUAER 0

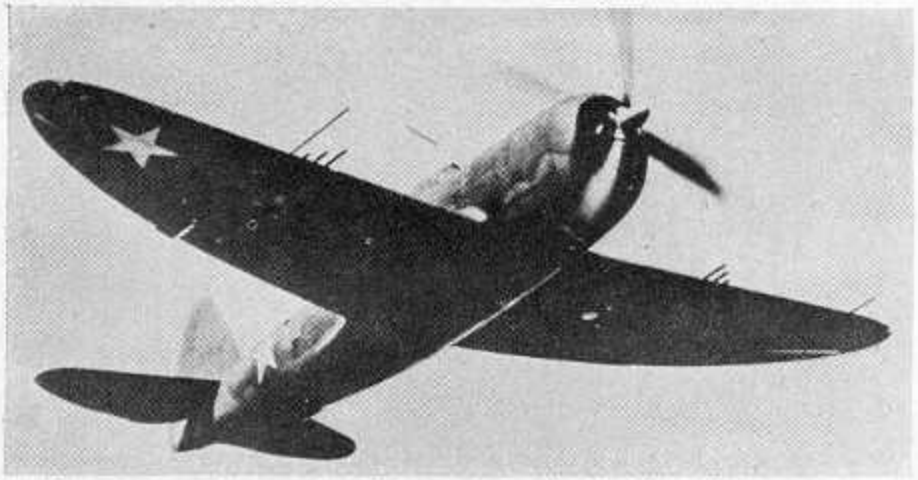
P-47 "THUNDERBOLT"



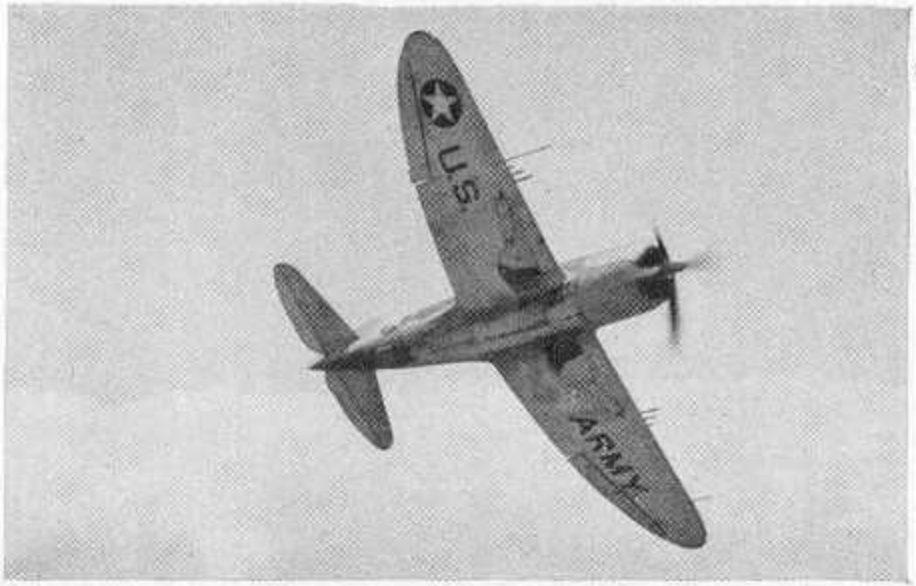
SPAN: 40 ft. 10 in.
LENGTH: 35 ft. 4 in.
APPROX. MAX. SPEED: over 390 m. p. h.
SERVICE CEILING: over 38,000 ft.

RESTRICTED

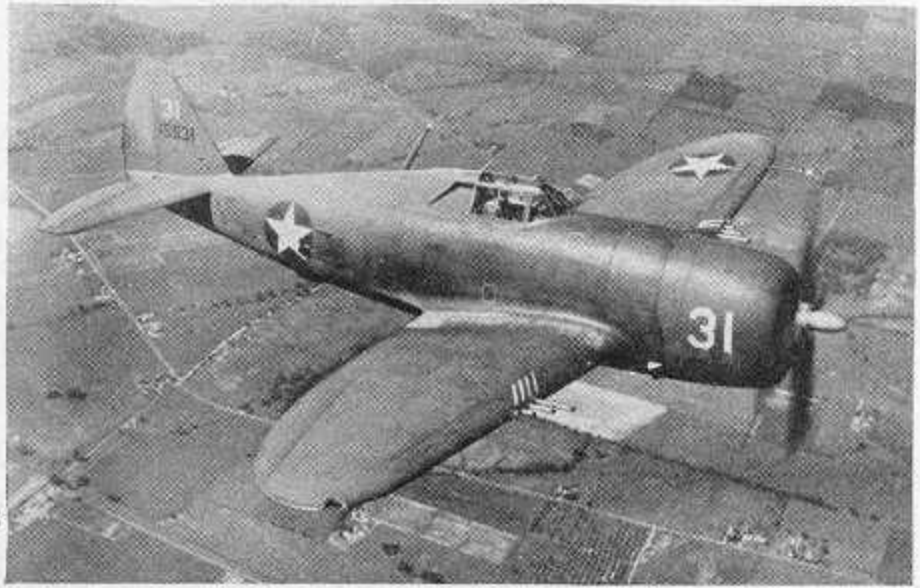
A



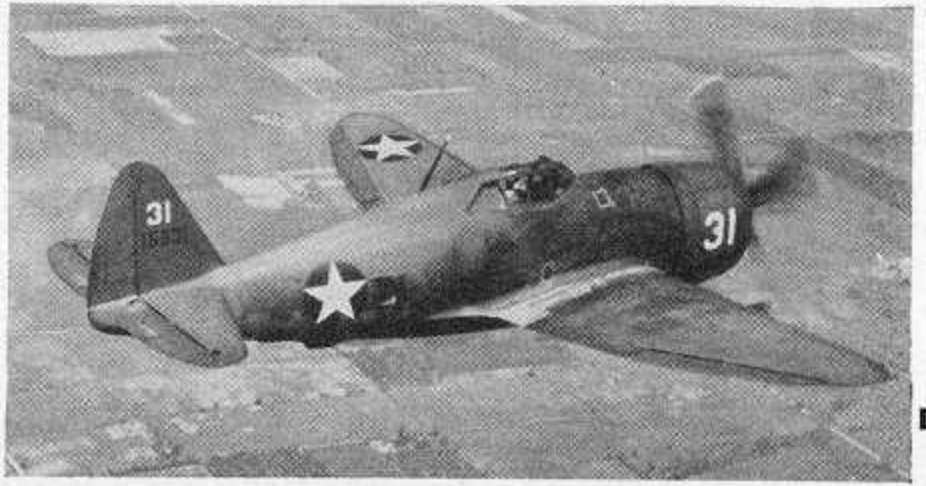
C



B



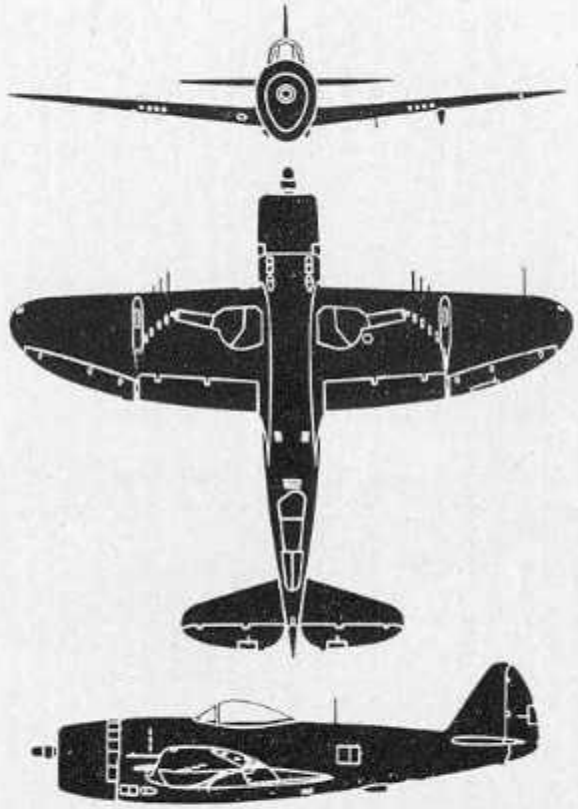
D



FIGHTER

U. S. A. U. K.

P-47 THUNDERBOLT



ARMY: P-47D
P-47 series
RAF: Thunderbolt
REPUBLIC, CURTISS
U. S. A.

DISTINGUISHING FEATURES: Low, mid-wing monoplane with single radial engine. Deep, blunt-nosed fuselage narrowing towards tail. Small bubble cockpit canopy. Wing has slightly tapered leading edge and elliptical trailing edge with rounded tips. Single fin and rudder with tapered leading edge and curved trailing edge. Wing has full dihedral from heavy oval-sectioned fuselage.

INTEREST: Designed as a high-altitude fighter, the P-47 is also being used for bombing and ground attack. It is the largest and heaviest single-engine fighter in use. Together with P-51's and P-38's, the Thunderbolt has teamed up to provide escort for the heavy bombers all the way to Berlin. Powered by one Pratt & Whitney air-cooled radial engine. For escort in the United Kingdom, the P-47 has a radius of action up to 400 miles by use of external drop tanks and the fighter relay system.

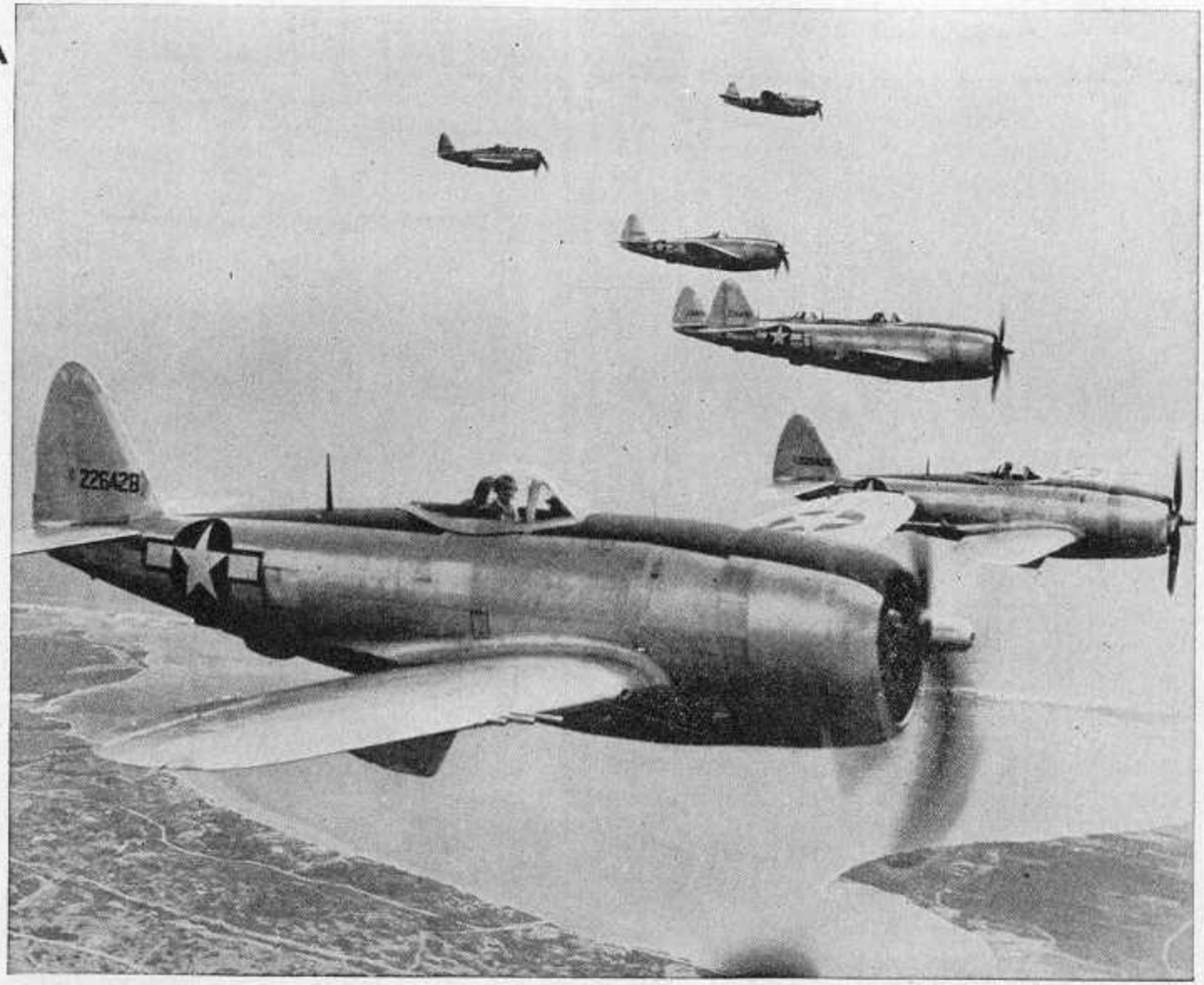
SPAN: 40 ft. 8 in.
LENGTH: 36 ft. 1 in.
APPROX. MAX. SPEED: 430 m.p.h. at 30,000 ft.
SERVICE CEILING: Over 40,000 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

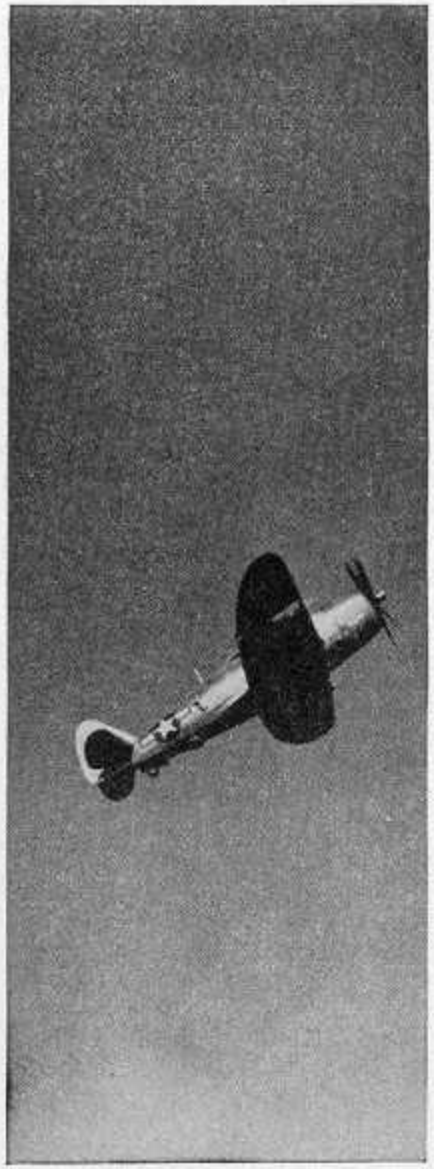
SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A



B

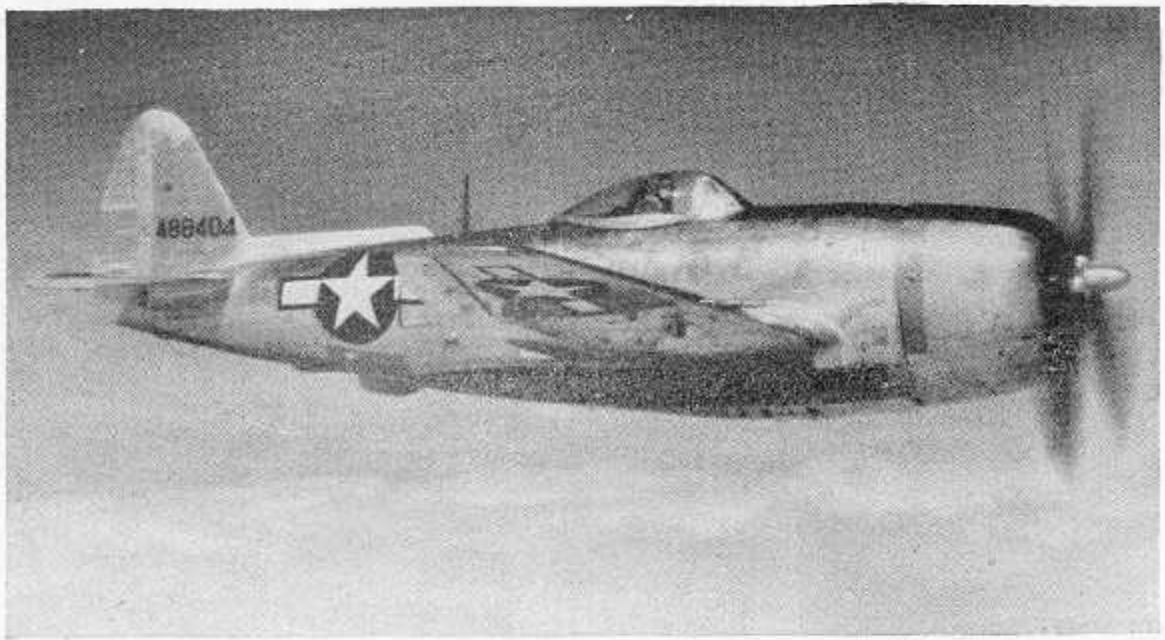


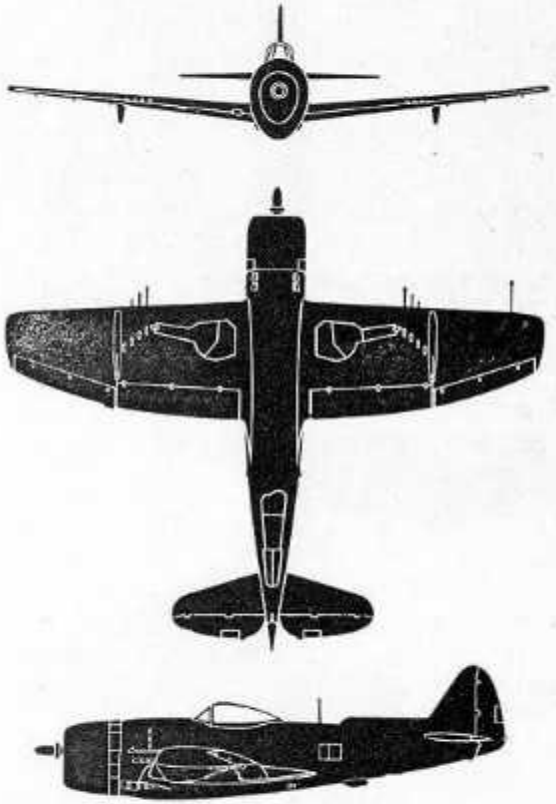
ARMY: P-47N
REPUBLIC
U. S. A.

FIGHTER

U. S. A.

P-47N THUNDERBOLT





DISTINGUISHING FEATURES: Single radial engine, low midwing monoplane. Wing tips of this new Thunderbolt are blunt and slightly raked. Trailing edge of wing has graceful elliptical curve while leading edge is straight with slight taper. Small bubble-type cockpit canopy. Low extension of fin projects well forward on fuselage. Deep blunt nose typifies this heavy single engined fighter.

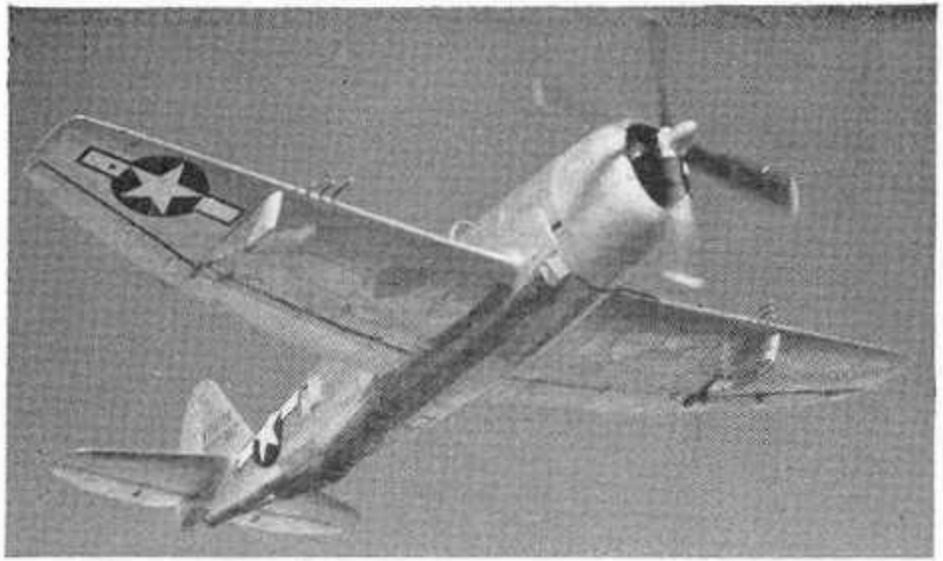
INTEREST: The latest model of the Thunderbolt to date, the P-47N, is faster and has longer range than any of its predecessors. Major modifications consist of a new engine, improved supercharger, extended fin, and redesigned, blunt-tipped wing of greater span. Developed for long-range escort, the P-47N will be used also as a short range fighter and fighter-bomber. Photos on reverse side are earlier model without fin extension.

SPAN: 42 ft. 5 in. **SERVICE CEILING:** Over 40,000 ft.
LENGTH: 35 ft. 5 in.
APPROX. MAX. SPEED: Above 450 mph.

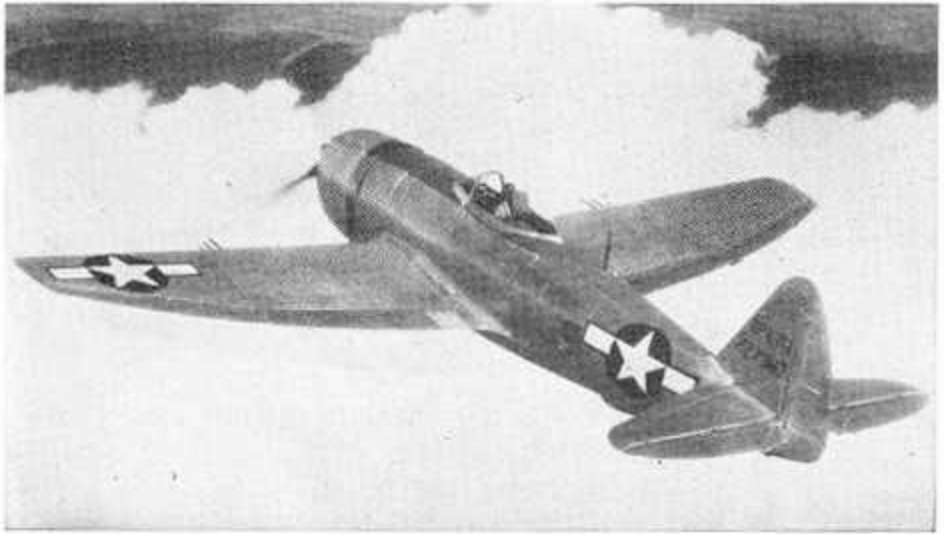
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

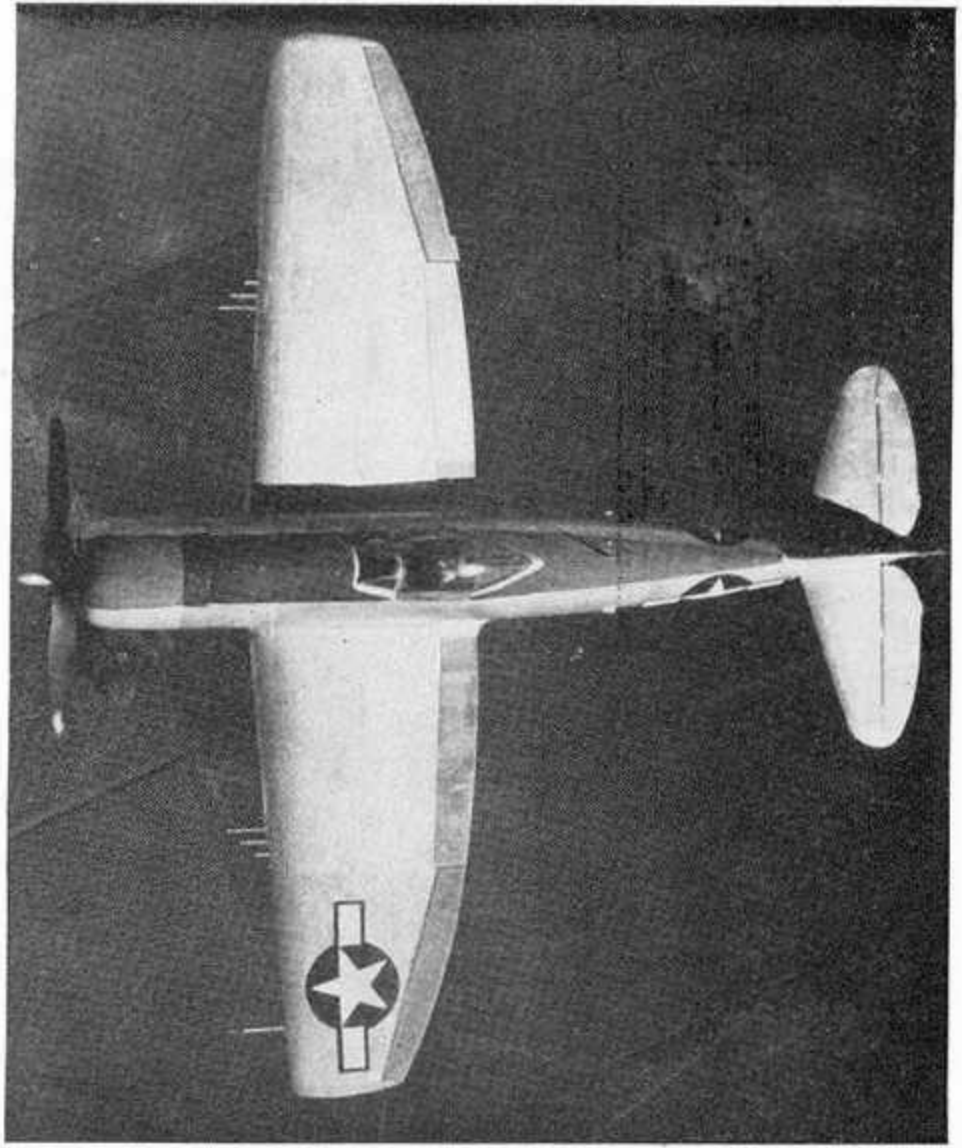
SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED



A ▲ B ▼ C ▶





(2)

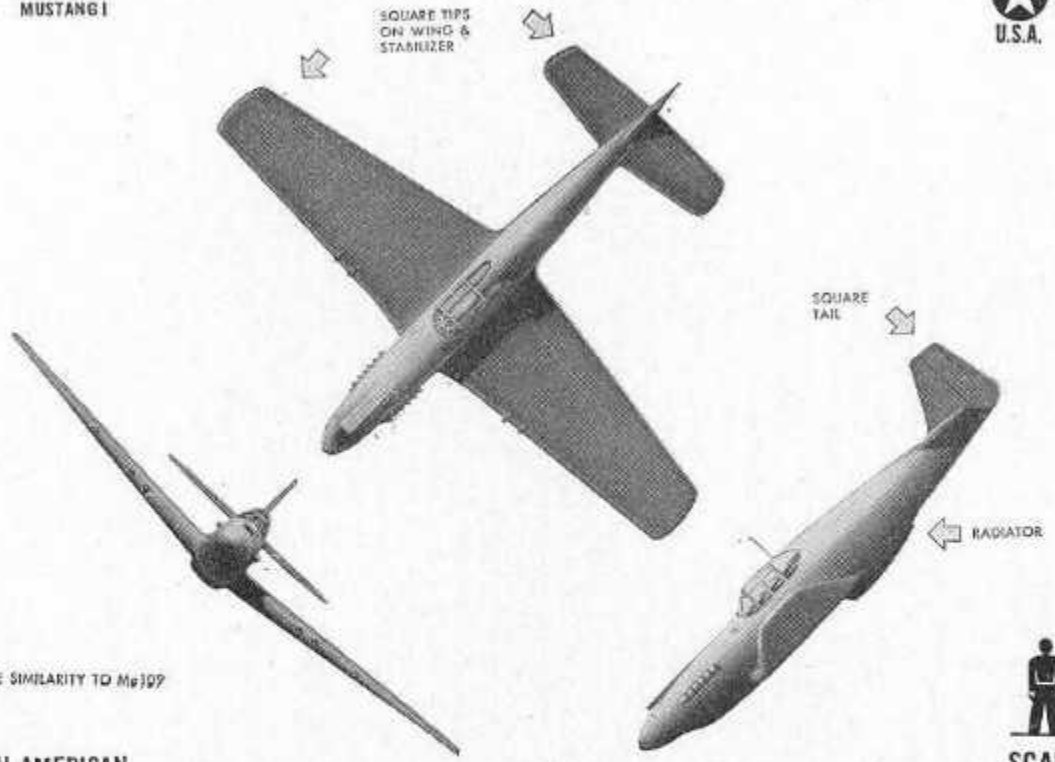
P-51 "MUSTANG"

ARMY: P-51
P-51 series
A-36

R. A. F. MUSTANG I

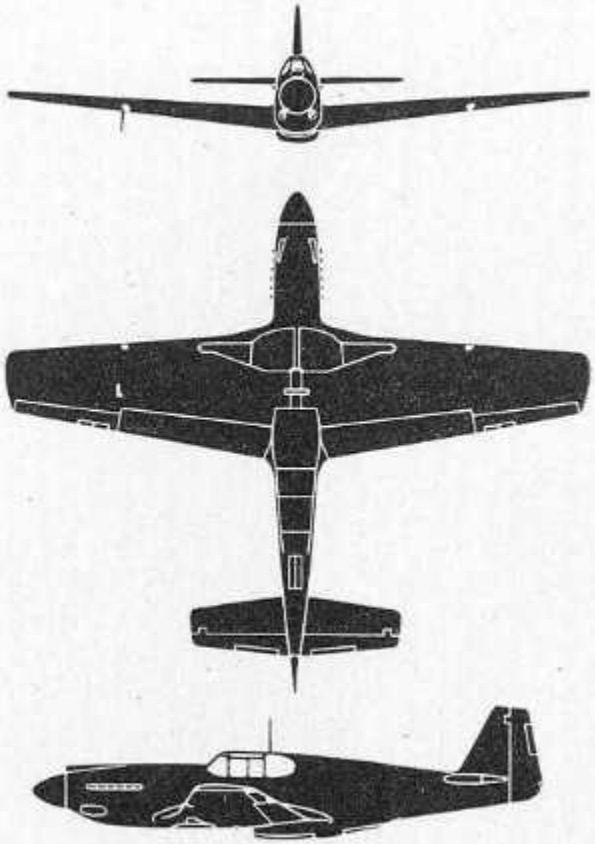
FIGHTER

U.S.A. U.K.



NORTH AMERICAN
U. S. A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Single in-line engine low-wing monoplane with long pointed nose. Wings have full dihedral and are tapered to nearly square tips. Long radiator mounted under fuselage extends aft of cockpit enclosure. Single fin and rudder is tall with a square top.

INTEREST: The Mustang was developed quietly and attracted little public notice until used by the British during the dramatic Commando raid on Dieppe. Although this aircraft has been used on fighter sweeps over Europe, a large part of its job in the war may prove to be that of strafing and reconnaissance. In this capacity it is joining the Tomahawk (P-40) and the Lysander in British Army cooperation squadrons. An outstanding virtue of this aircraft is its speed near the ground. A bomber version fitted with dive brakes, the A-36, is now in service for ground-air support.

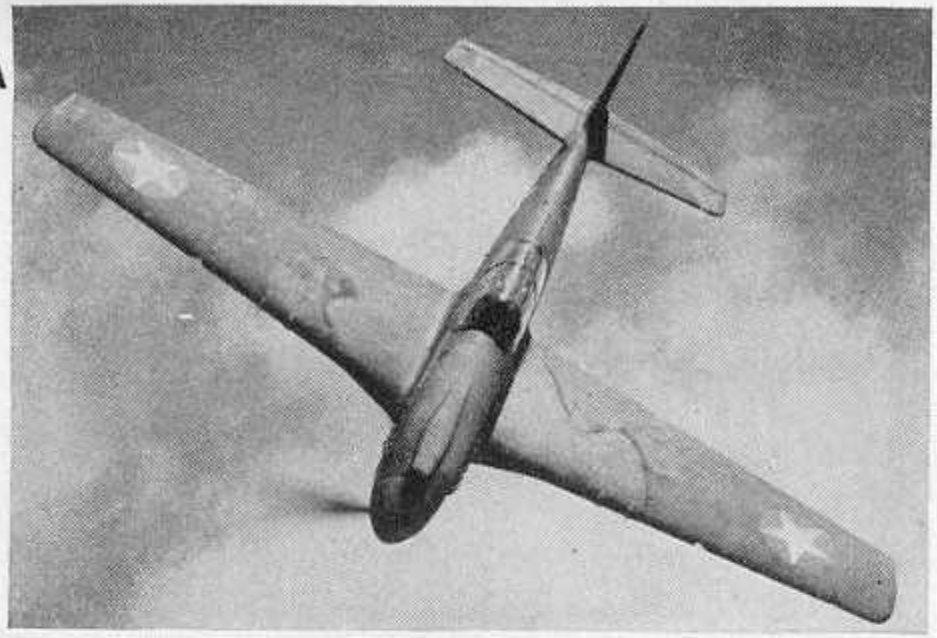
SPAN: 37 ft.
LENGTH: 32 ft. 3 in.
APPROX. MAX. SPEED: 390 m. p. h.

SERVICE CEILING:
over 30,000 ft.

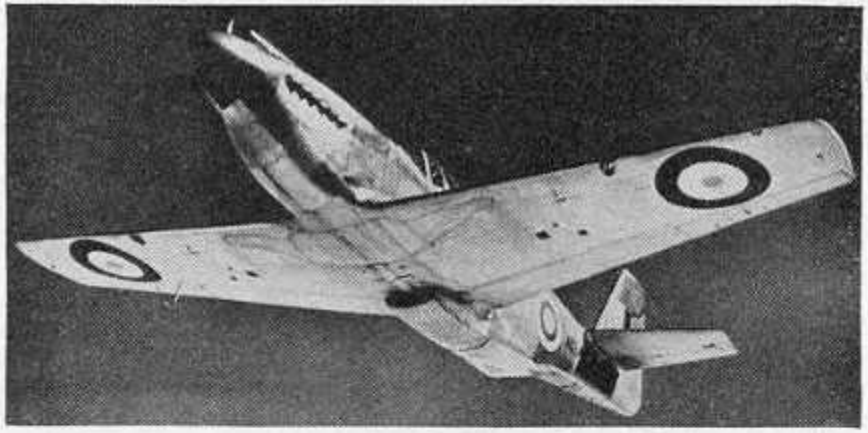
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

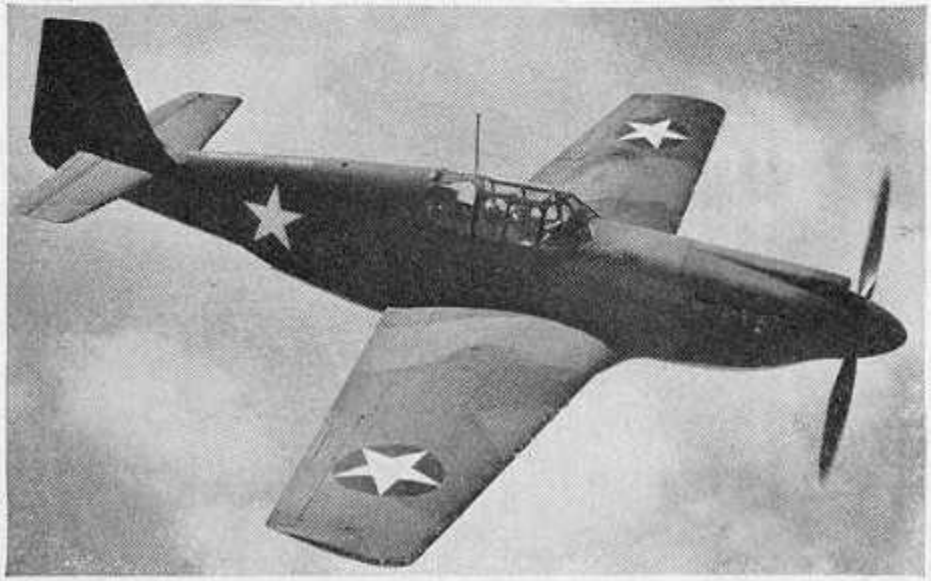
RESTRICTED



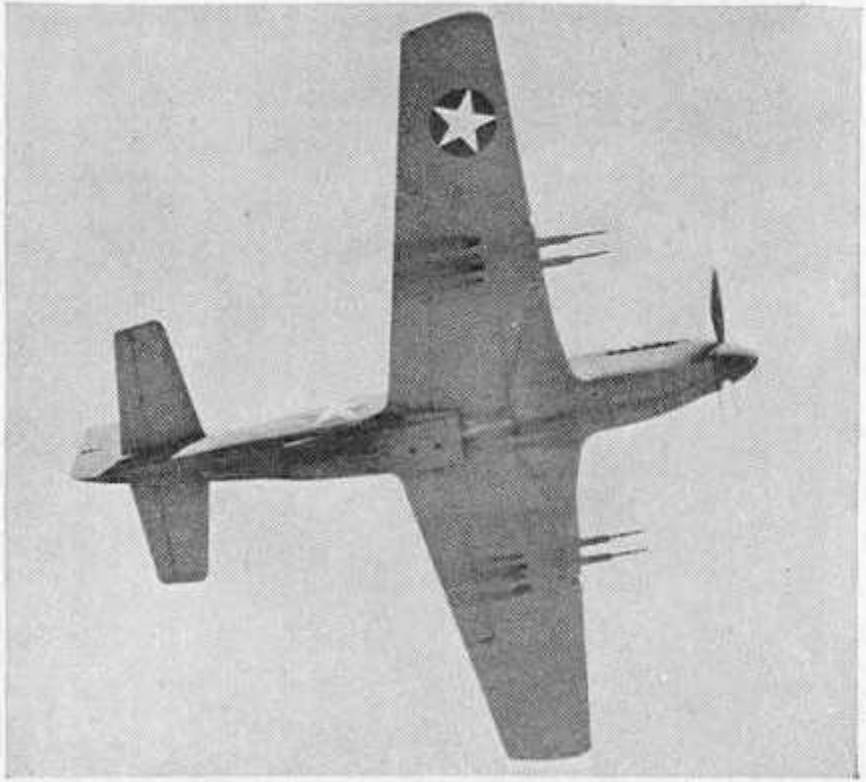
A



C



B

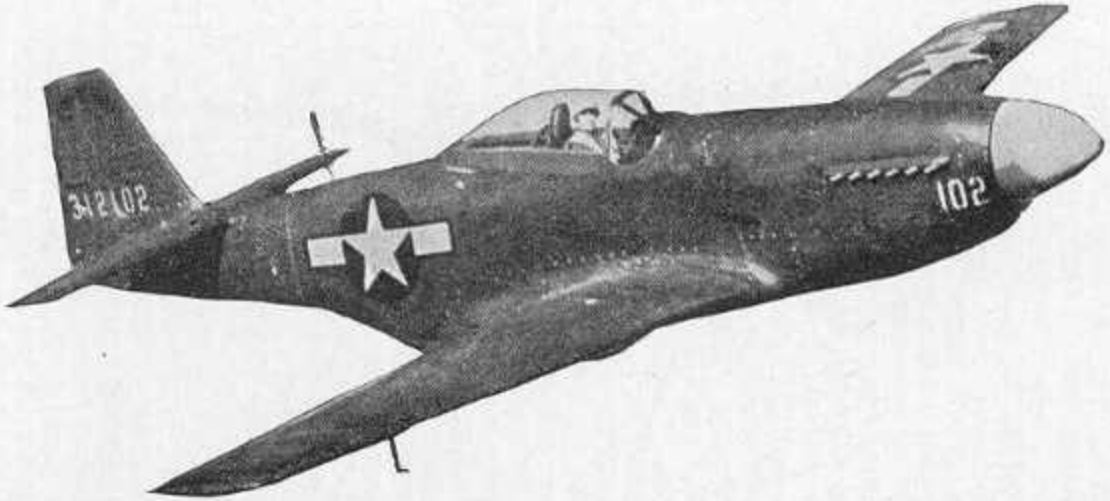


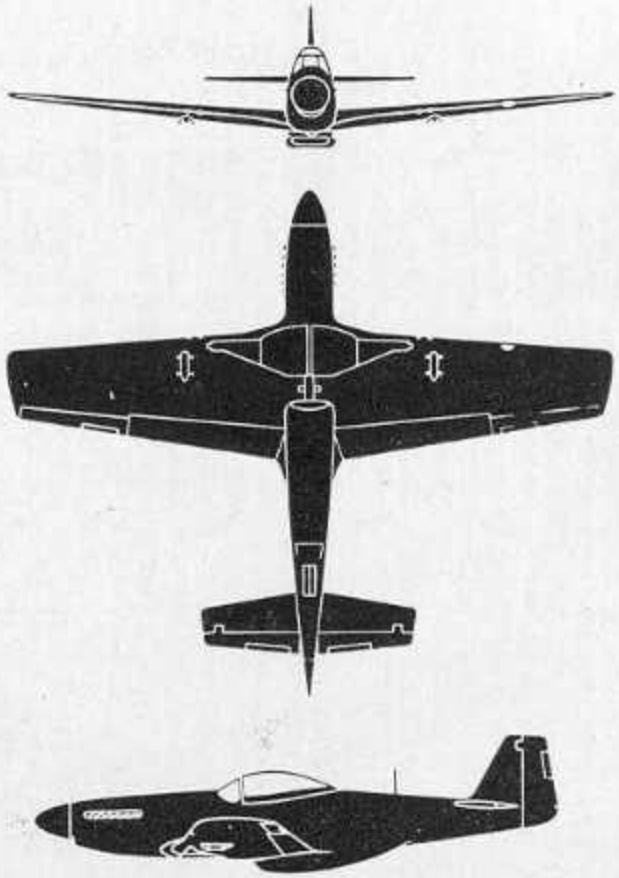
D

FIGHTER

U. S. A. U. K.

P-51 MUSTANG





ARMY: P-51D
P-51 series
RAF: Mustang
NORTH AMERICAN
U. S. A.

DISTINGUISHING FEATURES: Single-engine, low-wing monoplane. Long pointed nose with small airscoop beneath. Bubble cockpit canopy. Large radiator beneath fuselage extending aft of wing. Tapered wing with large fillets at the roots of the leading edge. Square wing tips. Wing has full dihedral. Angular fin and rudder faired forward into fuselage. Tapered tailplane with square tips.

INTEREST: The Mustang is one of the best and fastest single-engine fighters in use. A versatile aircraft, it has been used for escort fighting, bombing, ground attack, reconnaissance, and dive bombing. The P-51B, C and D are powered by one Packard-built Rolls-Royce Merlin engine rated at 1500 horsepower. The dive bomber version, a modification of the P-51A, is known as the A-36.

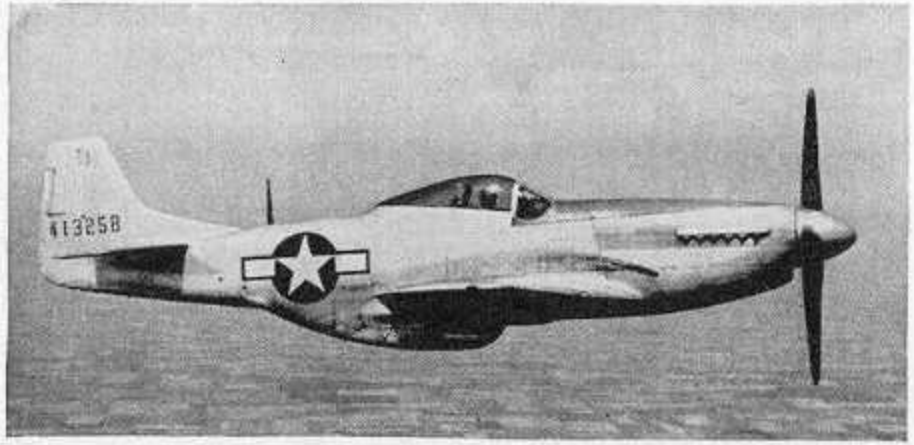
SPAN: 37 ft. 0 in.
LENGTH: 32 ft. 3 in.
SERVICE CEILING: 43,700 ft.
APPROX. MAX. SPEED: 449 m.p.h. at 30,000 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

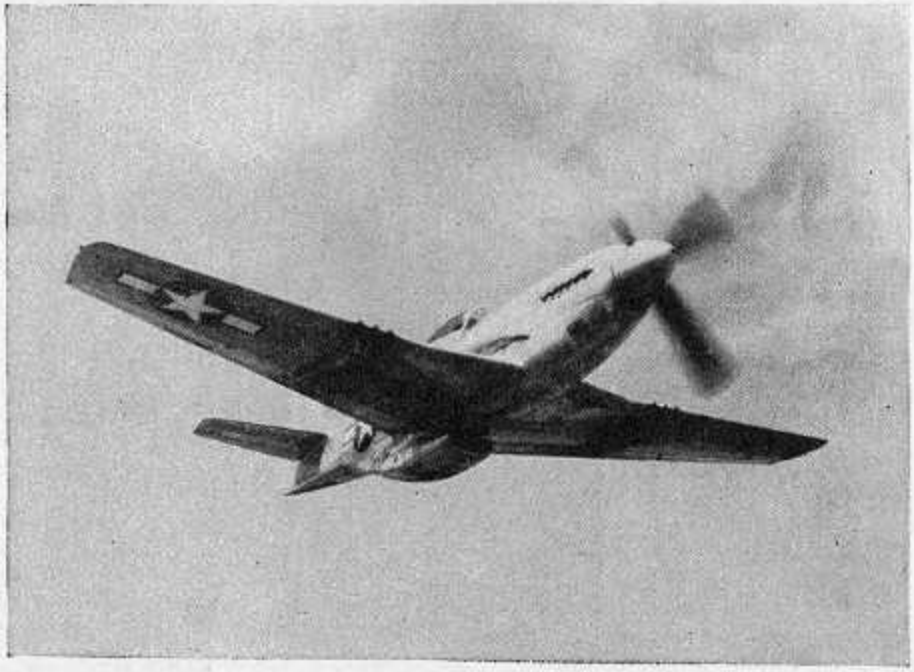
RESTRICTED

A

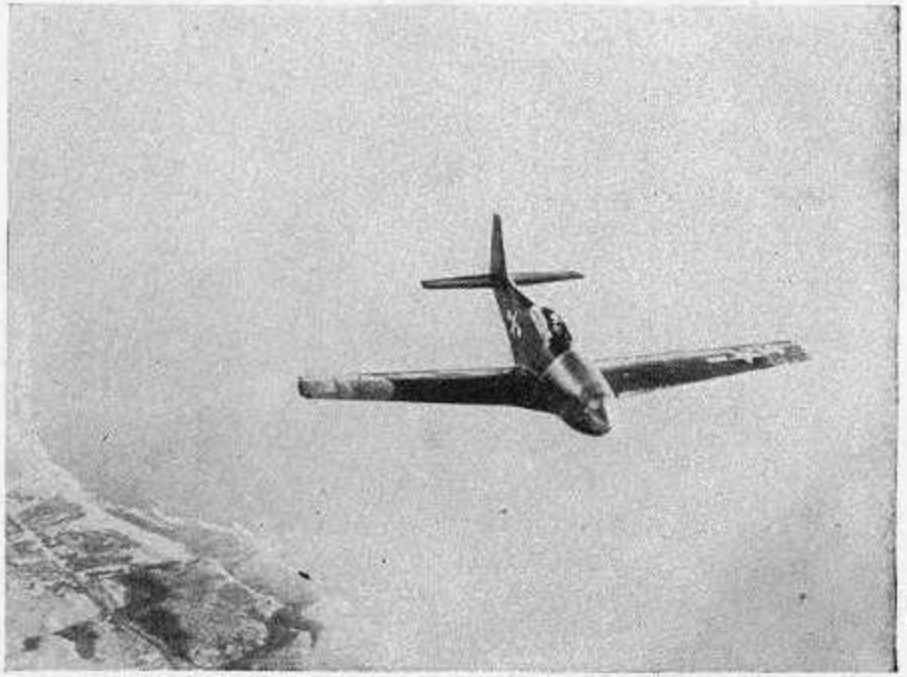


C

B



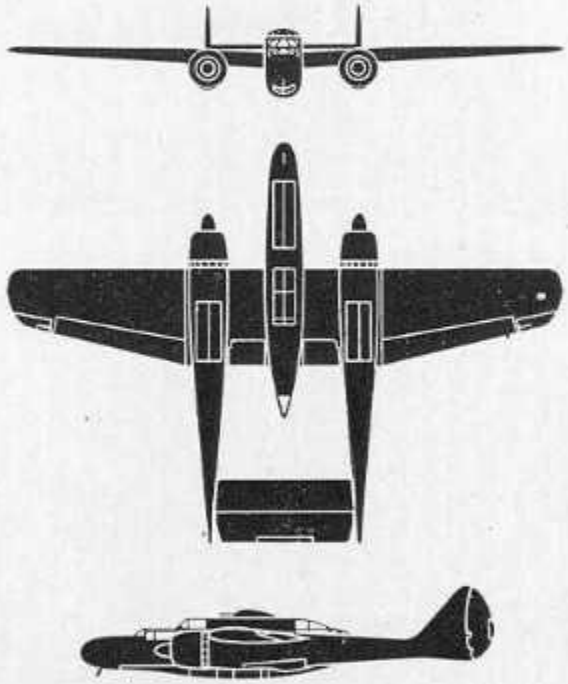
D



NIGHT FIGHTER

U. S. A.

P-61 BLACK WIDOW



ARMY: P-61A
NORTHROP
U. S. A.

DISTINGUISHING FEATURES: Twin-engine, twin-boom monoplane. Engines form forward part of twin-booms. Large central crew nacelle extends forward beyond engines and terminates well aft of wing. Leading edge of wing is straight, trailing edge tapered out-board of booms with blunt tips. Rectangular tail-plane mounted high between the booms. Fins and rudders faired into the booms. Crew nacelle has two distinct steps on top both forward and aft.

INTEREST: The primary mission of this new fighter of the AAF is the destruction of hostile aircraft during periods of darkness and under conditions of poor visibility. It is the first aircraft to be specifically designed for this duty. It carries a crew of three, is heavily armed and armored, and has a long range. Powered by two Pratt & Whitney air-cooled radial engines.

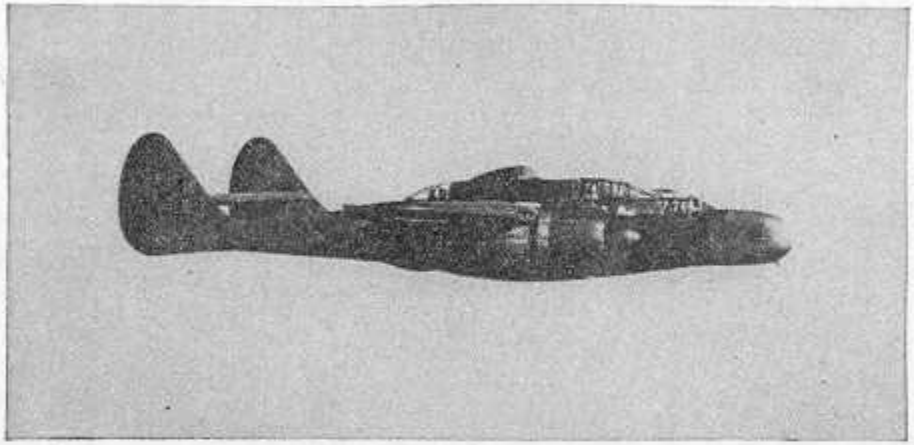
SPAN: 66 ft. 0 in.
LENGTH: 49 ft. 6 in.
APPROX. MAX. SPEED: Over 300 m.p.h.
SERVICE CEILING: About 30,000 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

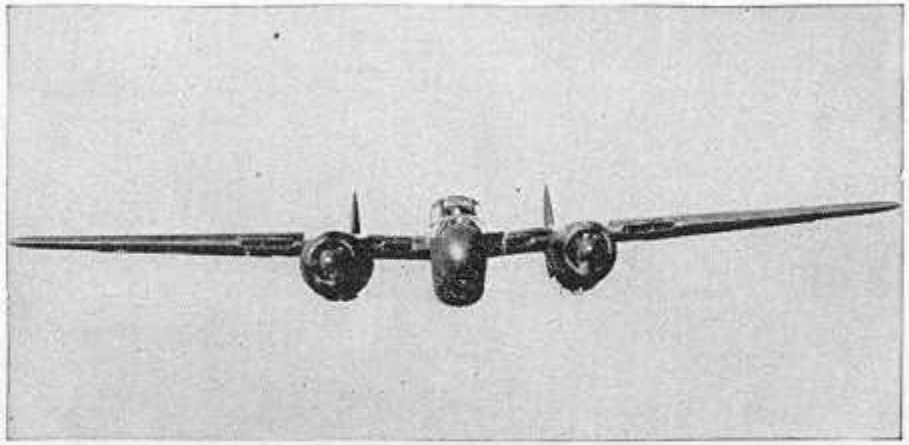
SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

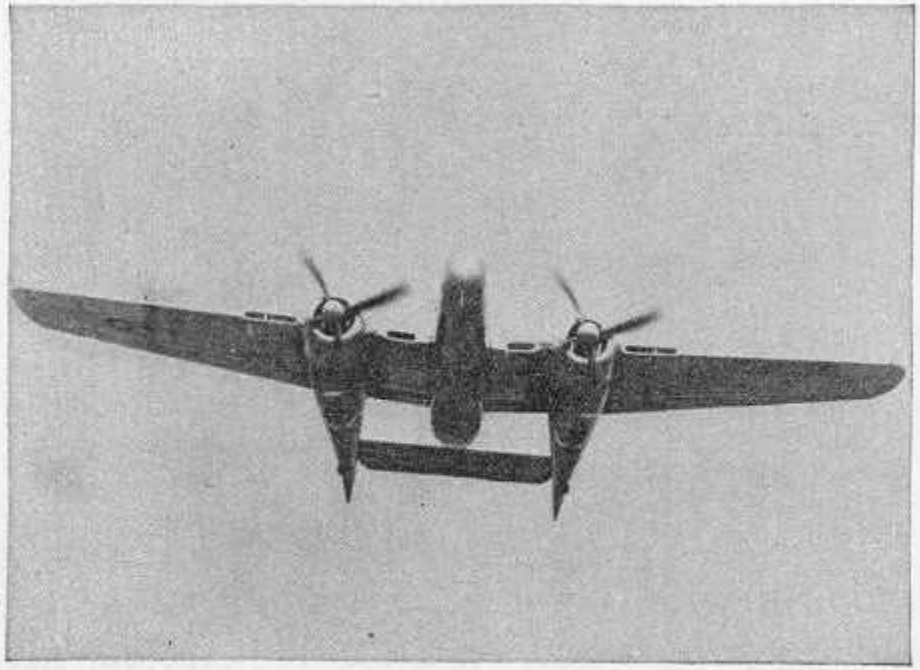
A



C



B

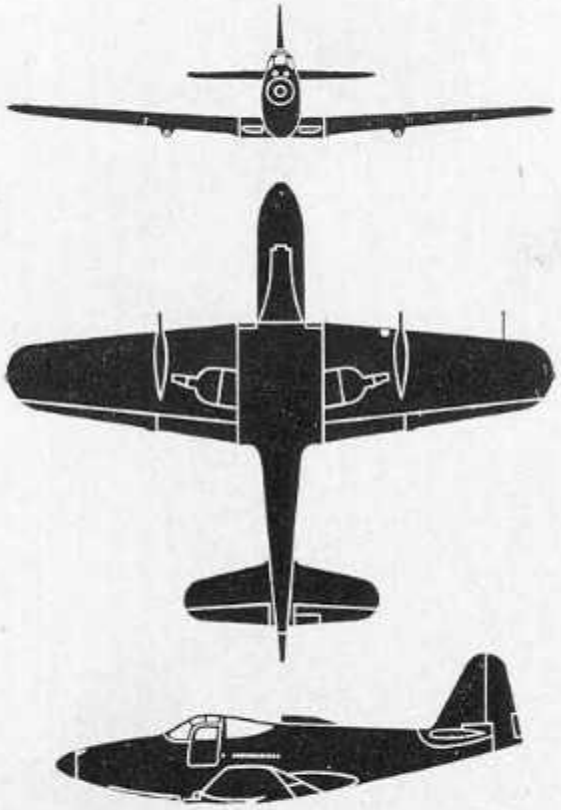


D

FIGHTER

U. S. A.

P-63 KINGCOBRA



ARMY: P-63A
BELL
U. S. A.

DISTINGUISHING FEATURES: Single-engine, low-wing monoplane. Short center section of wing is straight, outer section is tapered with rounded tips. Well streamlined fuselage. Long, pointed nose. Small airscoop directly behind pilot. Wing set well aft. Tail surfaces have straight taper with rounded tips.

INTEREST: The P-63 is a new and larger version of the P-39. Although the P-63 differs little in appearance from the P-39, it is an entirely new aircraft. Slightly larger and heavier than the P-39, it incorporates all of the latest ideas learned through combat experience. Like the P-39, it carries a 37mm cannon in its nose. It is powered by one Allison, liquid-cooled, "V" engine and has an exceptionally fast climb.

SPAN: 38 ft. 4 in.
LENGTH: 32 ft. 8 in.
APPROX. MAX. SPEED: About 400 m.p.h.
SERVICE CEILING: 35,000 ft.

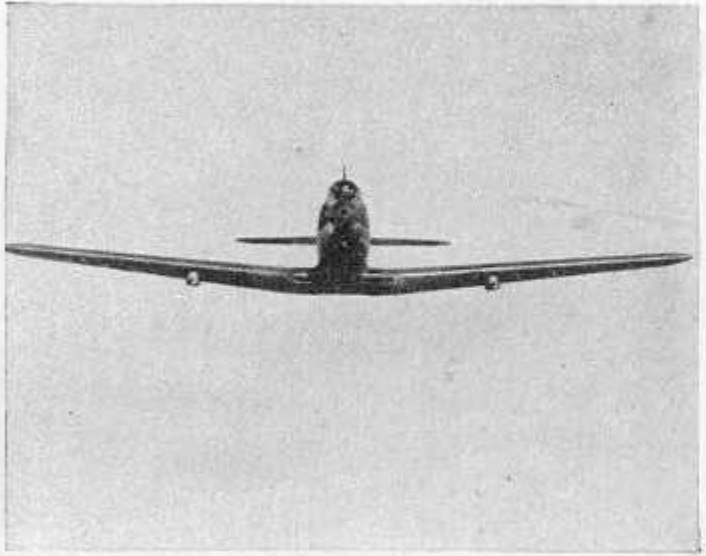
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

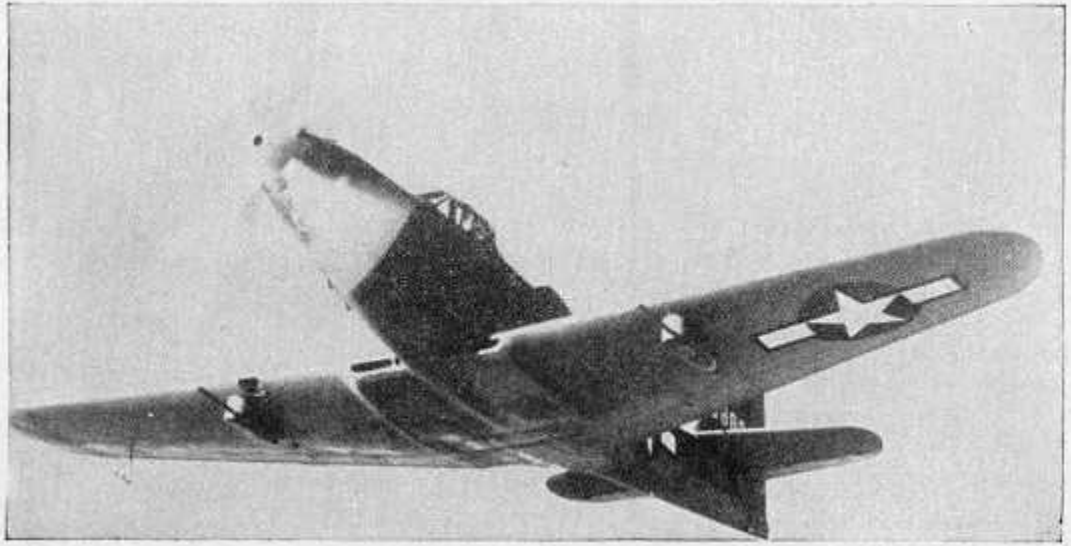
RESTRICTED

A

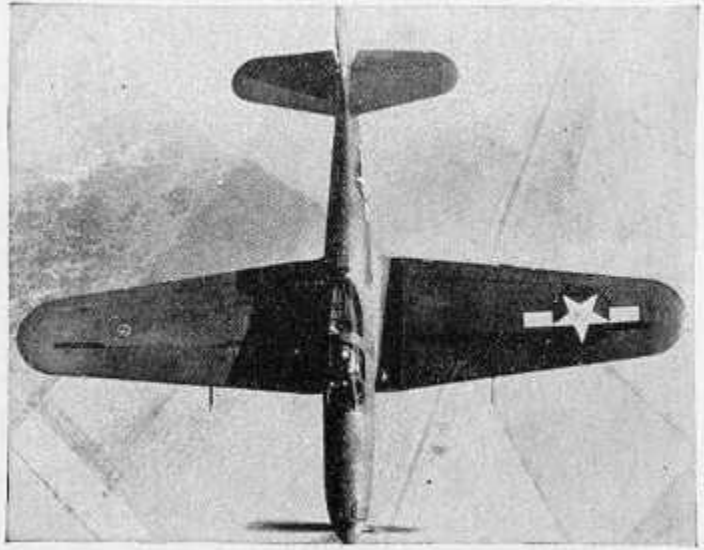
C



B

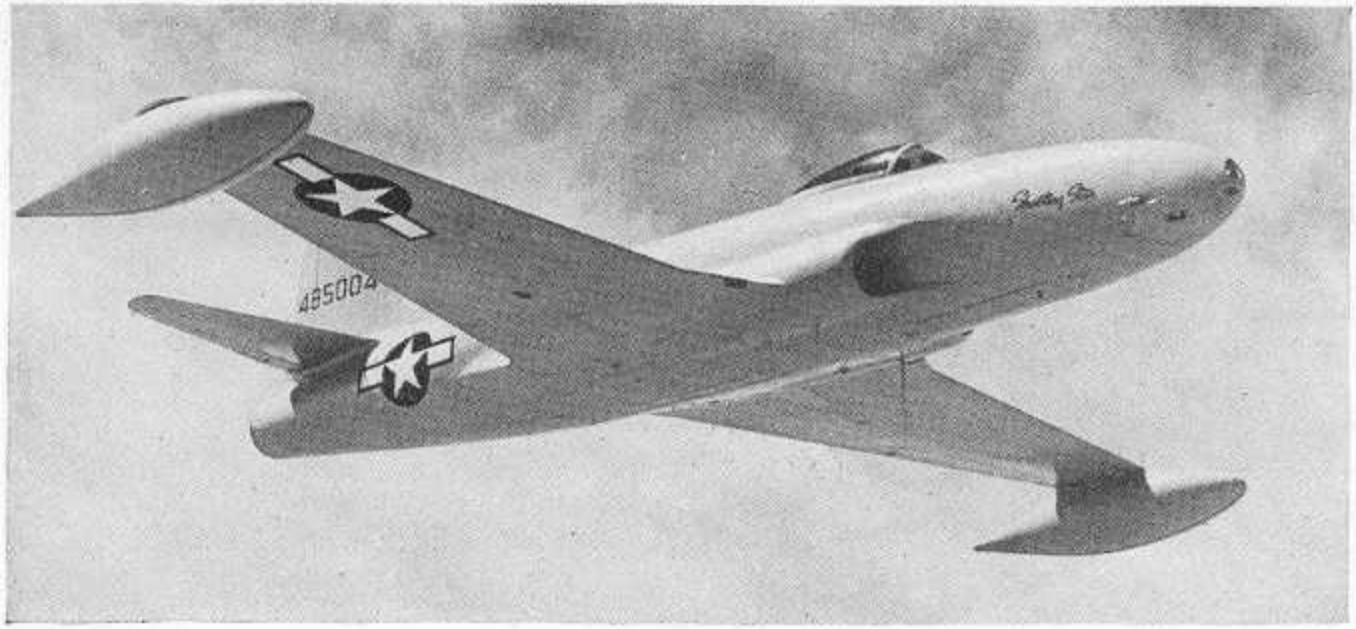


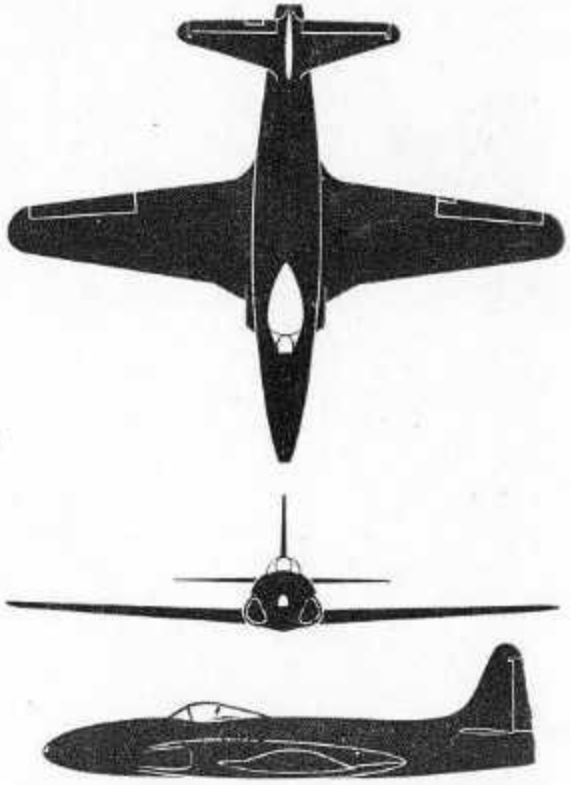
D



P-80 SHOOTING STAR

U.S. ARMY
LOCKHEED

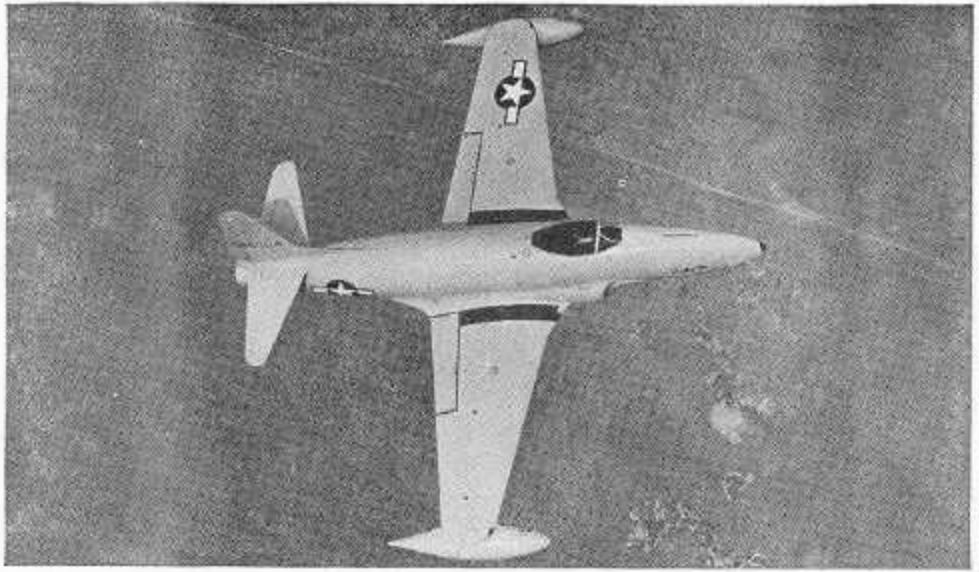


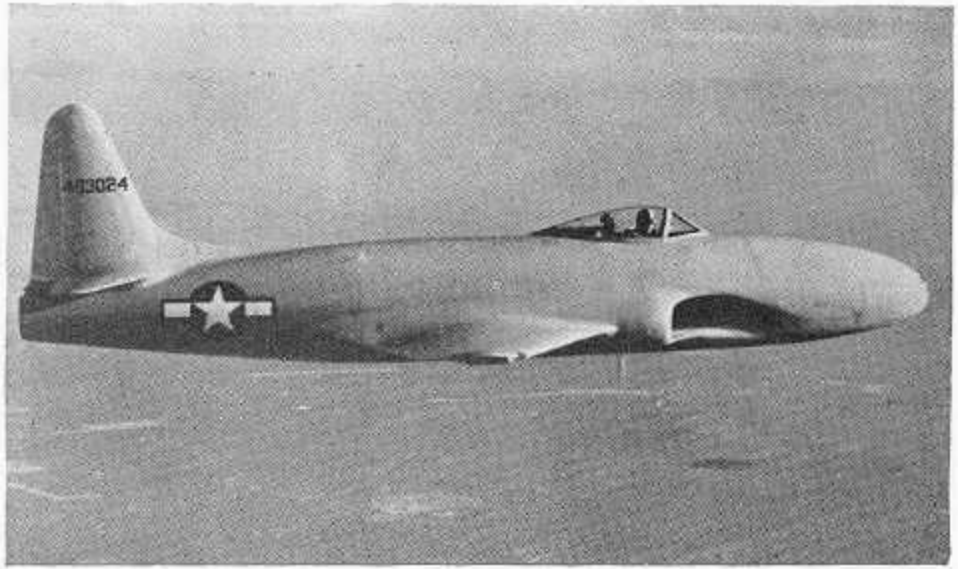


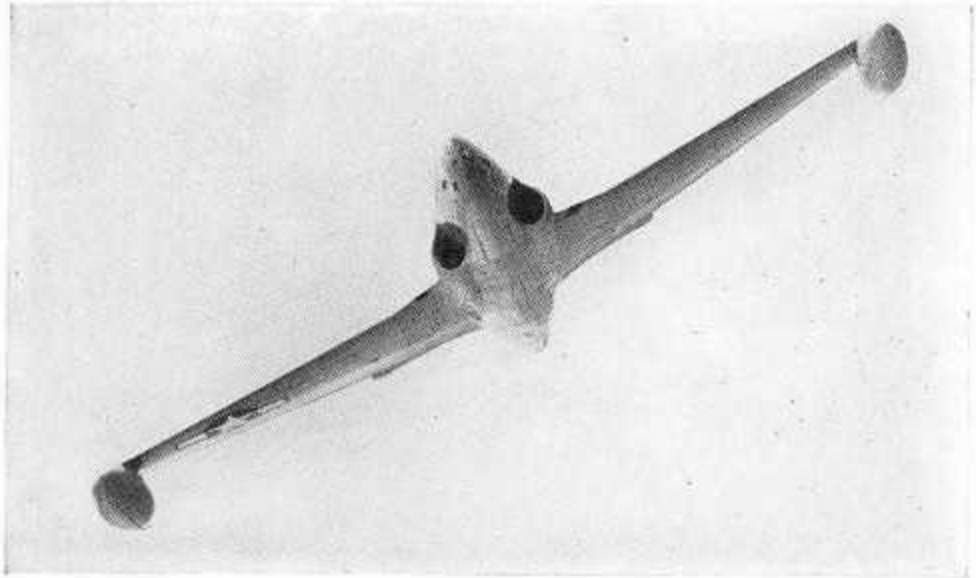
INFORMATION First operational U. S. jet, the P-80 is one of the cleanest fighters built. Absence of the propeller makes possible short landing gear and generally compact design. Single jet unit exhausts behind the tail surfaces, with double intakes on each side of the nose forward of the bubble canopied cockpit. Finish differs from AAF standard in that the color is light gray, highly polished to reduce drag. Range is increased by drop tanks installed on wingtips instead of in usual inboard position, an outstanding recognition feature.

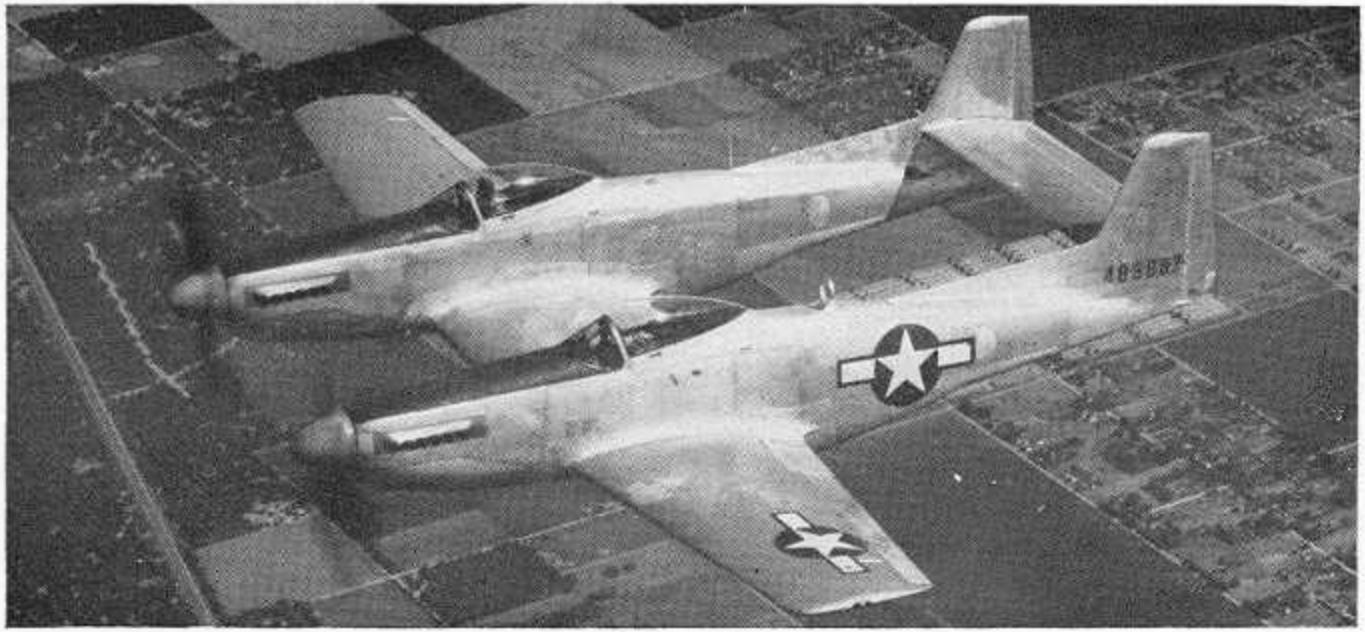
DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
39′	34′–6″	14,000 combat	over 500	over 4,000	48,500	over 1,000

APRIL 1946 RESTRICTED



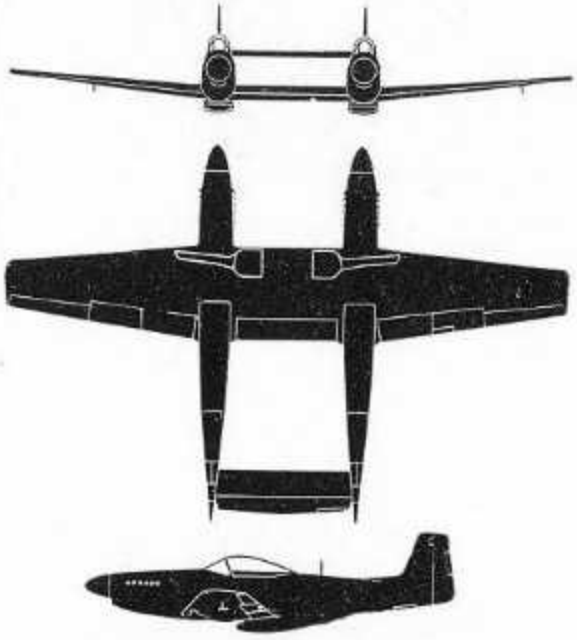

40024





P-82

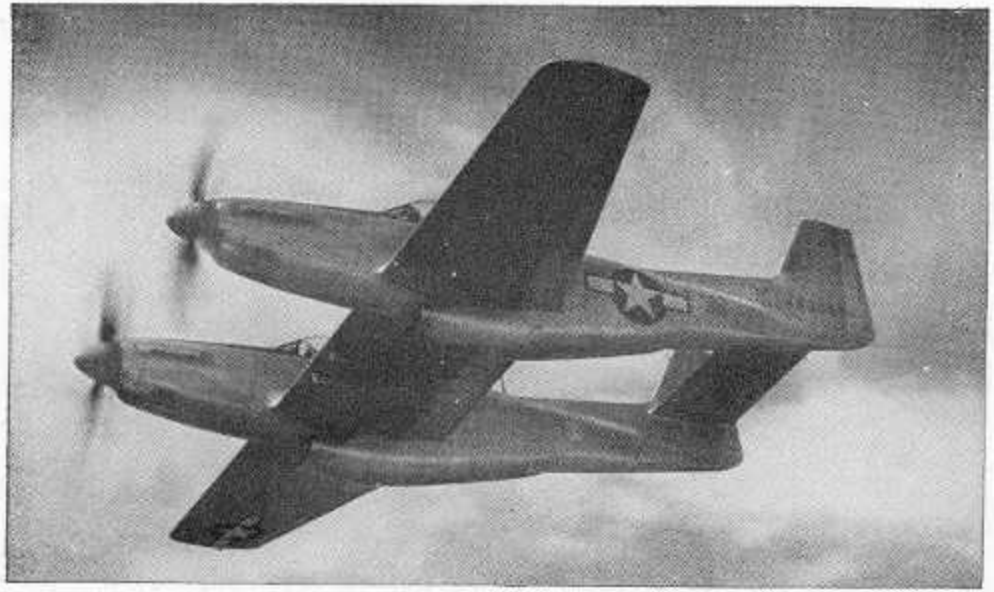
U.S. ARMY
NORTH AMERICAN

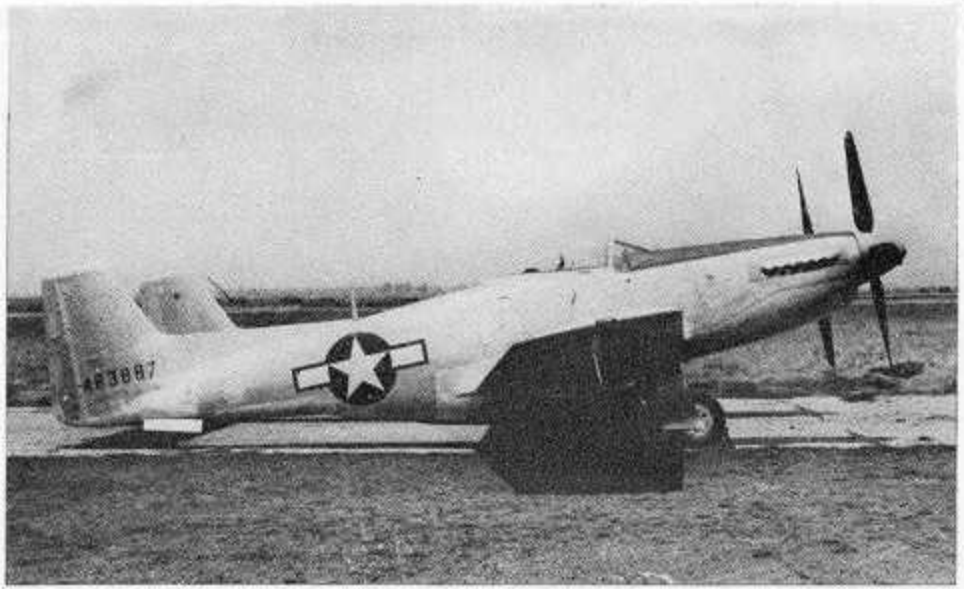


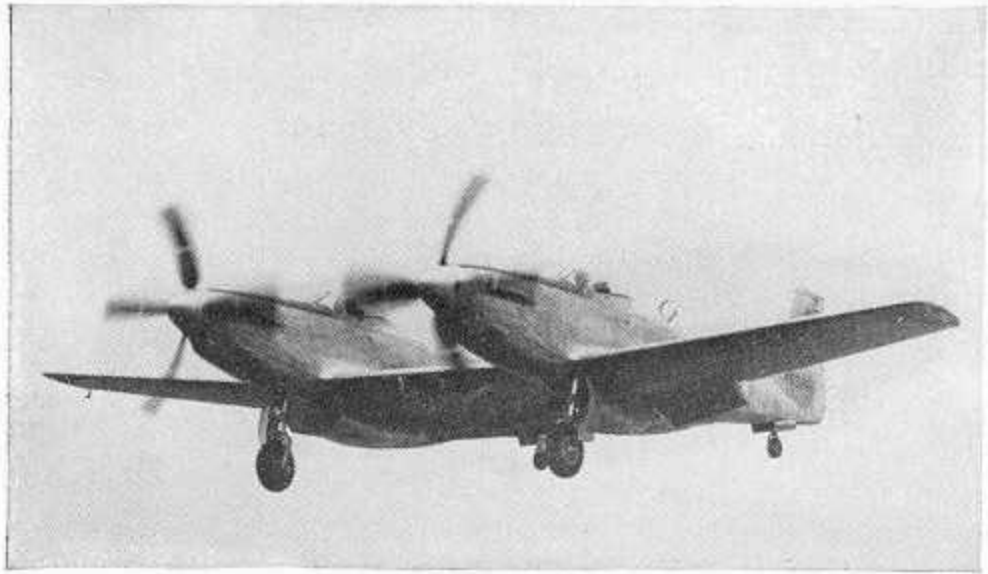
INFORMATION One of the most unorthodox of current U. S. aircraft, consisting of two P-51H fuselages joined together by a common center section and tail plane. Despite similarity to the P-38, recognition is not difficult due to the absence of the central pod, pilot and co-pilot each having a canopied cockpit in separate fuselages. Additional firepower can be fitted by mounting an 8 gun "Tank" under the center section, where they fire between the propellers. Bombs can be hung both under the wings and under the center section.

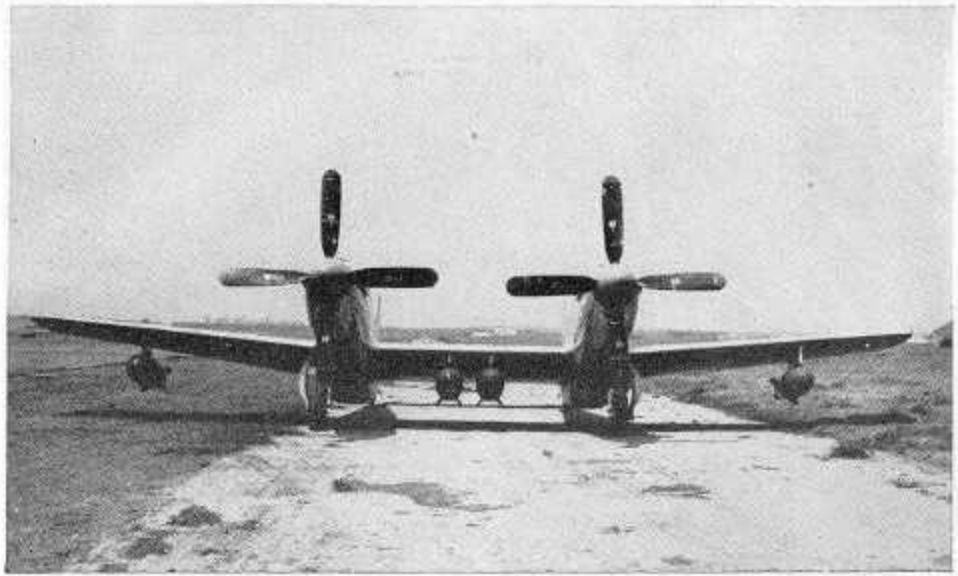
DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
51'–3"	38'–1"	22,000	over 450	over 4,500	41,600	over 3,000

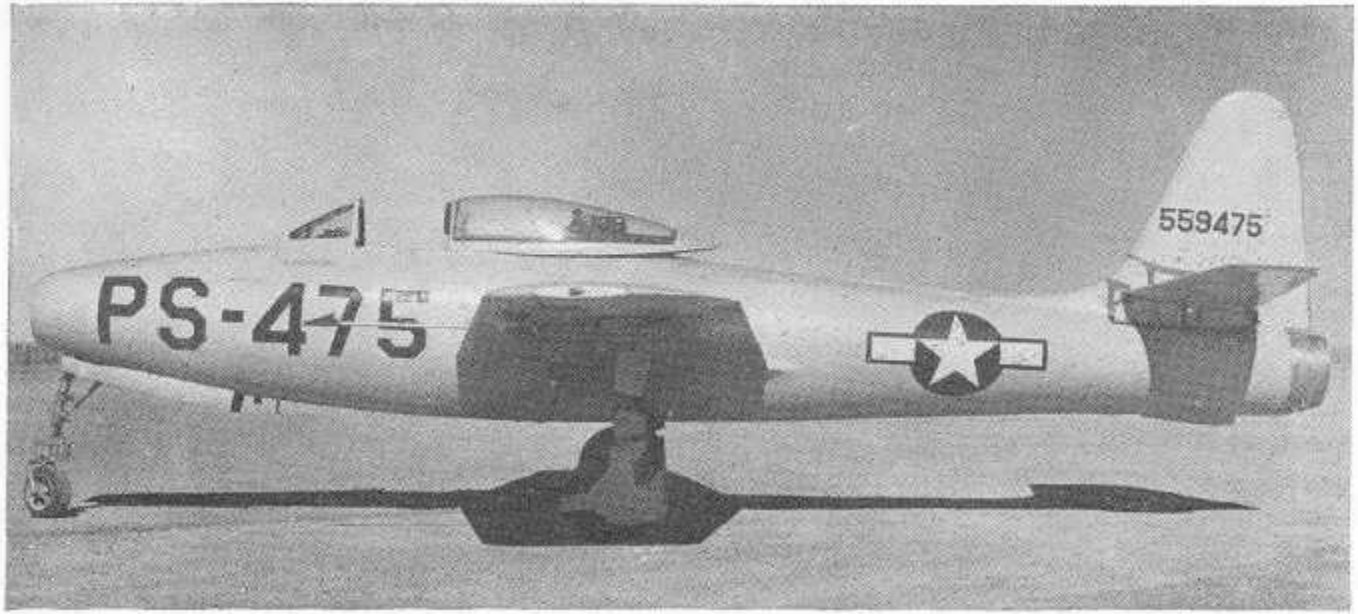
APRIL 1946 **RESTRICTED**











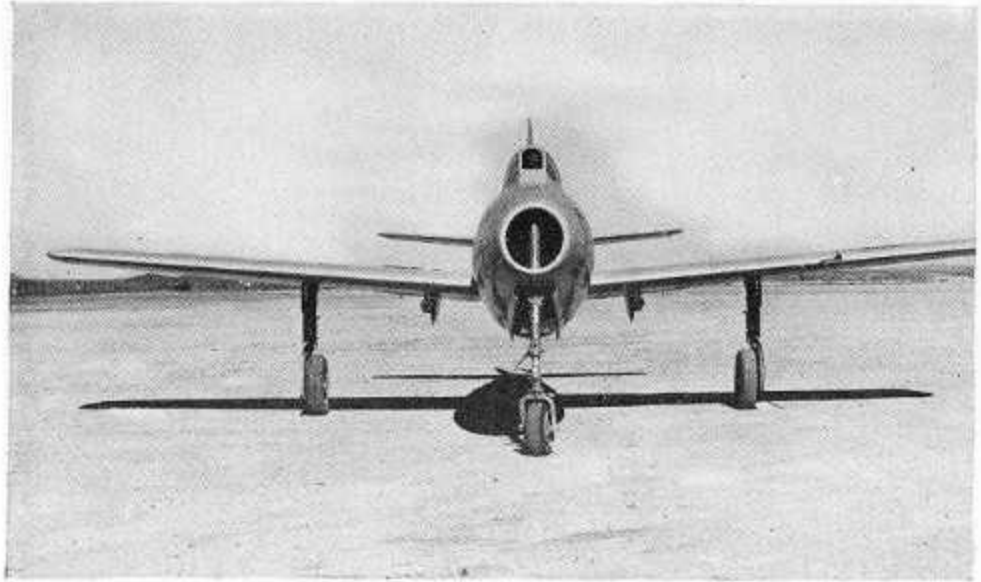
P-84

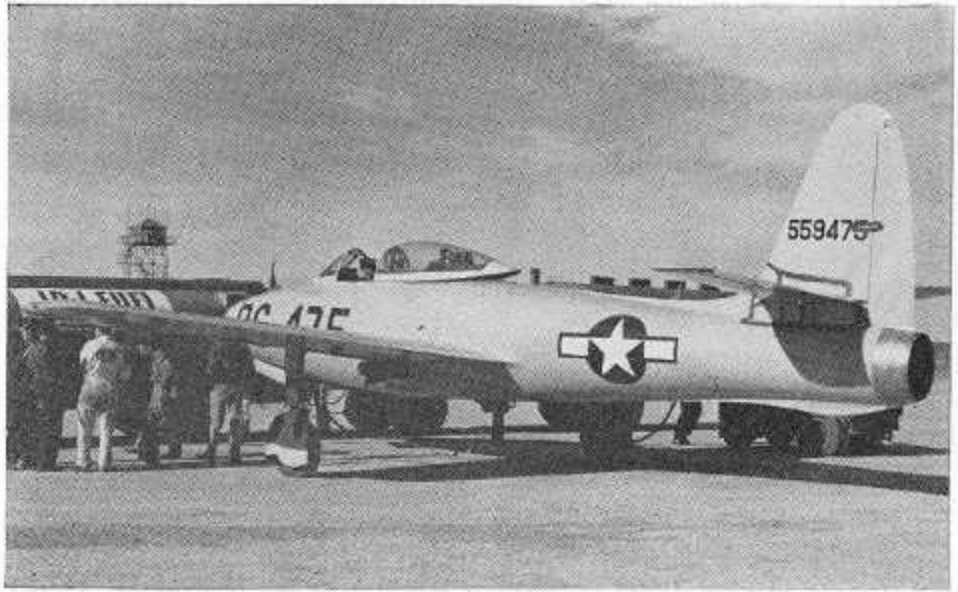
U.S. ARMY
REPUBLIC

INFORMATION Similar in general outline to the P-80, the P-84 nevertheless has distinct differences in detail. Intake is a single round orifice in the nose. The wing is closer to the fuselage center-line than the P-80's, and the horizontal stabilizer has a slight dihedral. The vertical fin is neither as high nor as pointed as that of the Shooting Star, which, combined with the blunt nose, provides the principal recognition feature. Drop tanks are fitted to the wingtips as on the P-80.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
36'–6"	36'–10"	13,400	over 550	over 4,000		over 1,000

APRIL 1946 RESTRICTED




559475

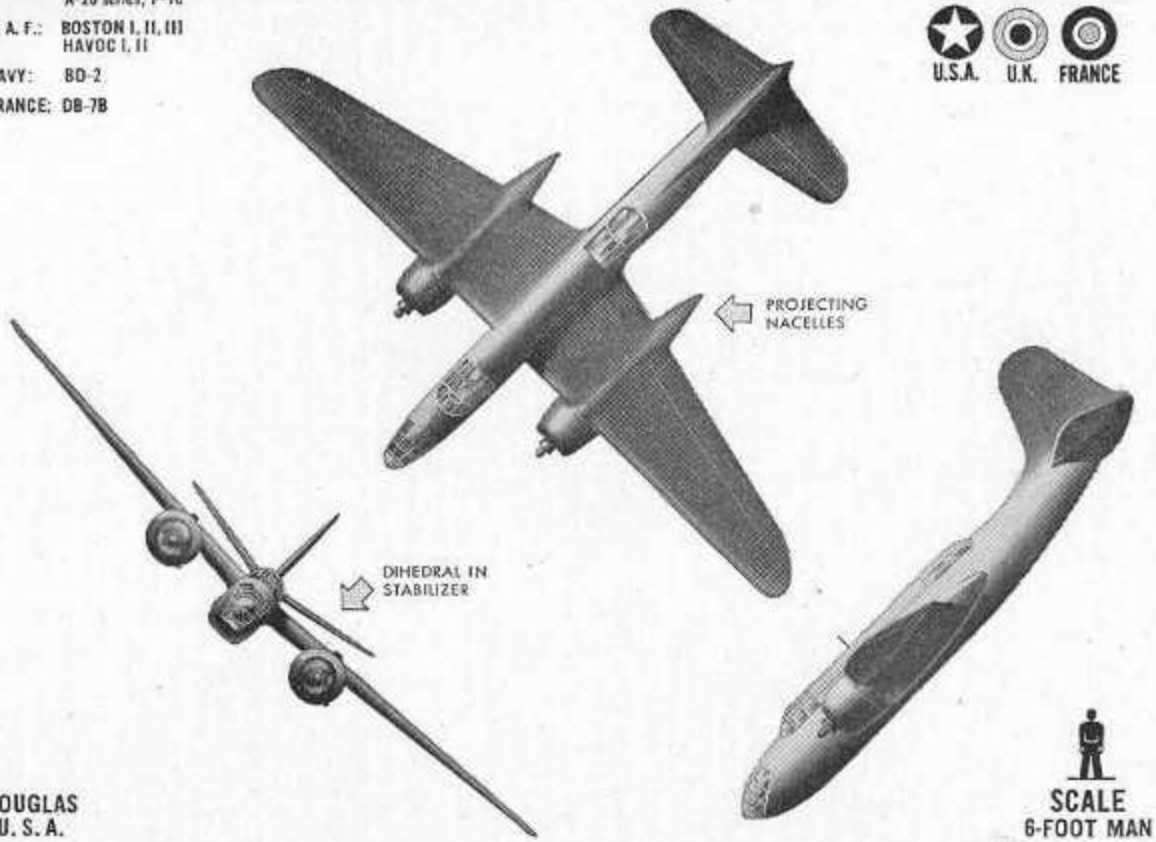

PS-475

A-20 "HAVOC" OR "BOSTON"

ARMY: A-20A
A-20 series; P-70
R. A. F.: BOSTON I, II, III
HAVOC I, II
NAVY: BD-2
FRANCE: DB-7B

LIGHT BOMBER—FIGHTER

U.S.A. U.K. FRANCE

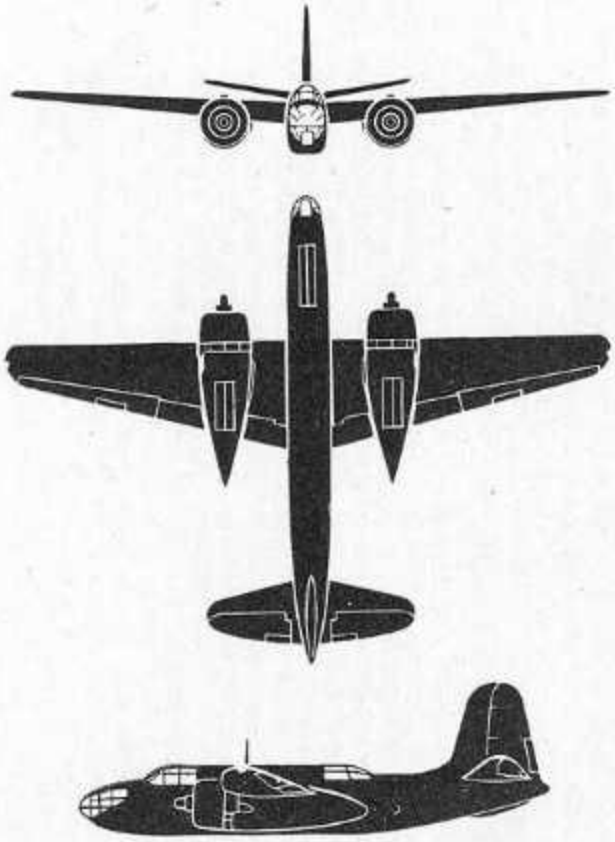


DOUGLAS
U. S. A.

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Shoulder wing monoplane with long thin transparent nose. Wing has straight leading edge and pronounced taper to trailing edge. Twin radial engines are underslung with nacelles extending well beyond the trailing edge of wing. Fuselage has a graceful attitude due to the turned up after section. Tall single fin and rudder.

INTEREST: This aircraft is unquestionably one of the best in its class. Designed as a fast day bomber, this plane is also used as a fighter. The night fighter version with solid nose is known as the P-70, while the British know the A-20 as the "Boston" when used as a bomber and as the "Havoc" when used for ground attack. The U. S. Navy designation is BD. The A-20 is much used in large scale daylight fighter and bomber sweeps over France and in North Africa. Because of its high performance, striking power and maneuverability, losses have been relatively small.



SPAN: 61 ft. 4 in.
LENGTH: 48 ft.
APPROX. SPEED: 340 m. p. h.

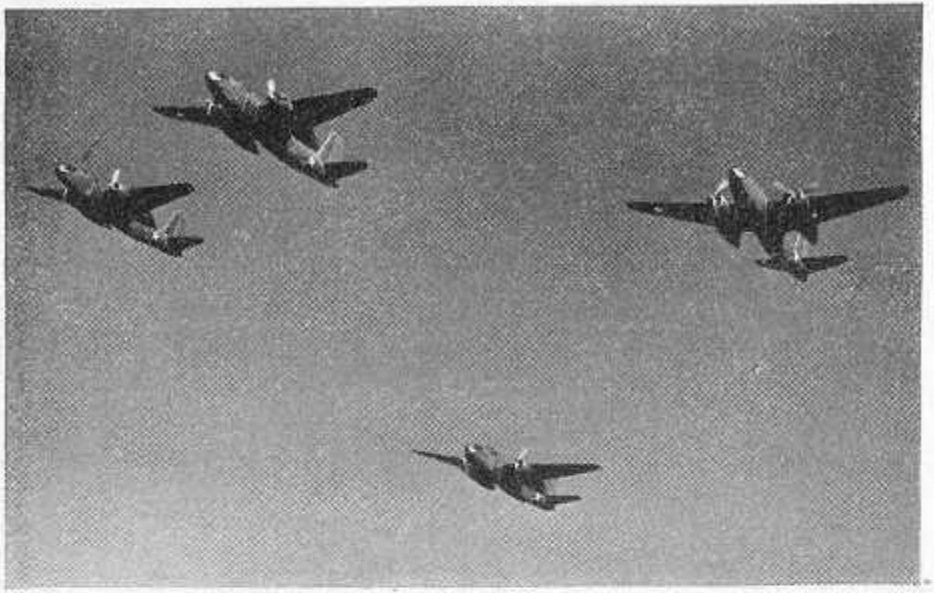
SERVICE CEILING:
over 24,000 ft.

RESTRICTED

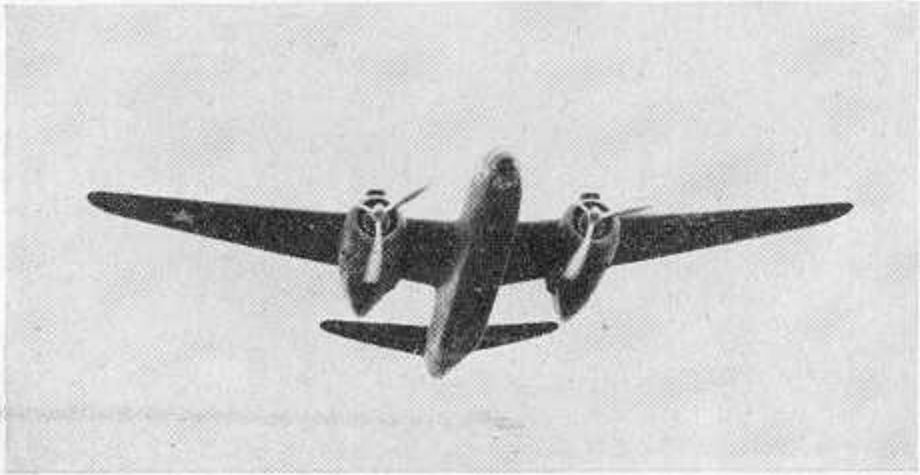
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 33

A

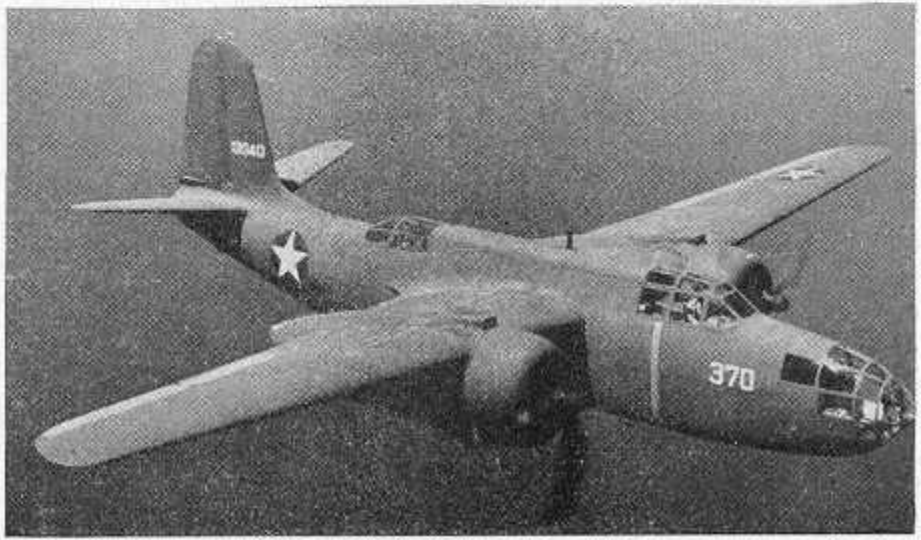


B



C

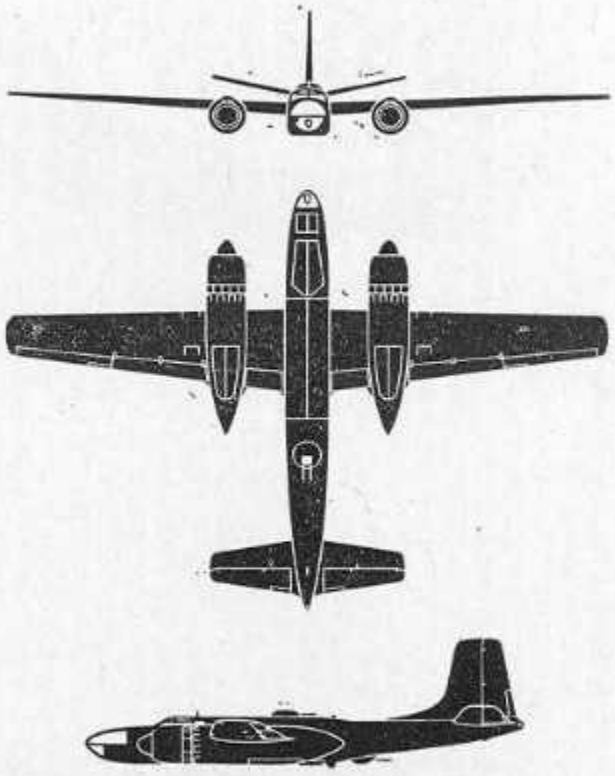
D



ATTACK BOMBER

U. S. A.

A-26 INVADER



ARMY: A-26B
DOUGLAS
U. S. A.

DISTINGUISHING FEATURES Mid-wing monoplane with twin radial engines. Long, narrow tapered wing with blunt tips and slight dihedral. Long engine nacelles protrude well beyond trailing edge of wing. Straight, narrow fuselage stepped up aft. Long nose. Large angular fin and rudder. Dihedral tailplane.

INTEREST: The AAF's new attack-bomber, developed from the highly successful A-20 Havoc. A very versatile design, the A-26 can be fitted with either a bombing nose or an all-purpose attack nose. These noses are interchangeable. The all-purpose attack nose (see pictures C and D) can be fitted with various armament and can mount a 75 mm cannon. As a bomber, the A-26 carries a bomb load as great as that of a medium bomber.

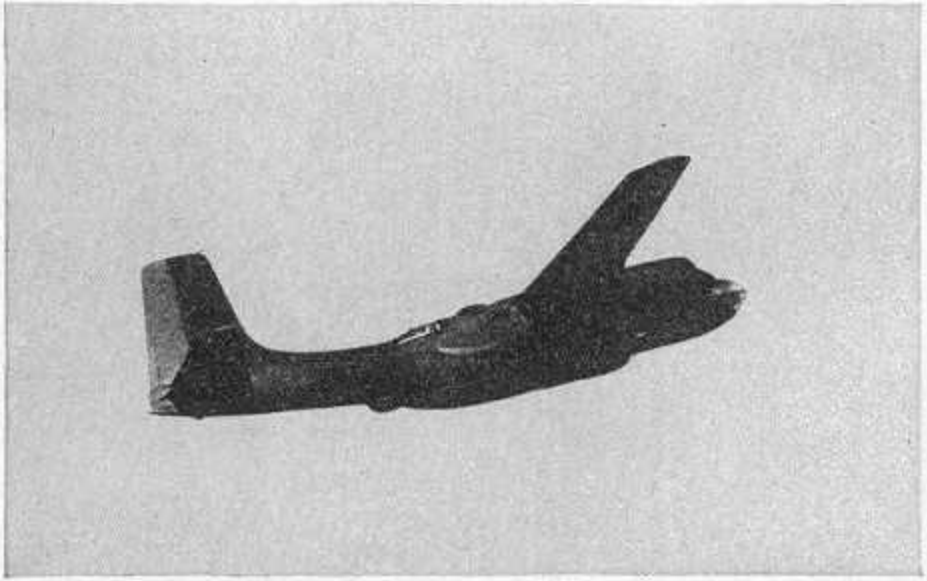
SPAN: 70 ft. 0 in.
LENGTH: 51 ft. 2 in.
SERVICE CEILING: 30,800 ft.
APPROX. MAX. SPEED: Over 300 m.p.h.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

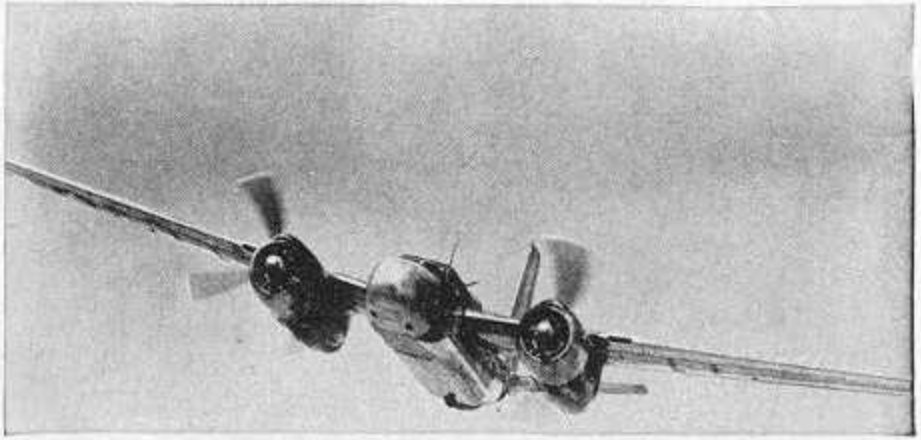
RESTRICTED

A

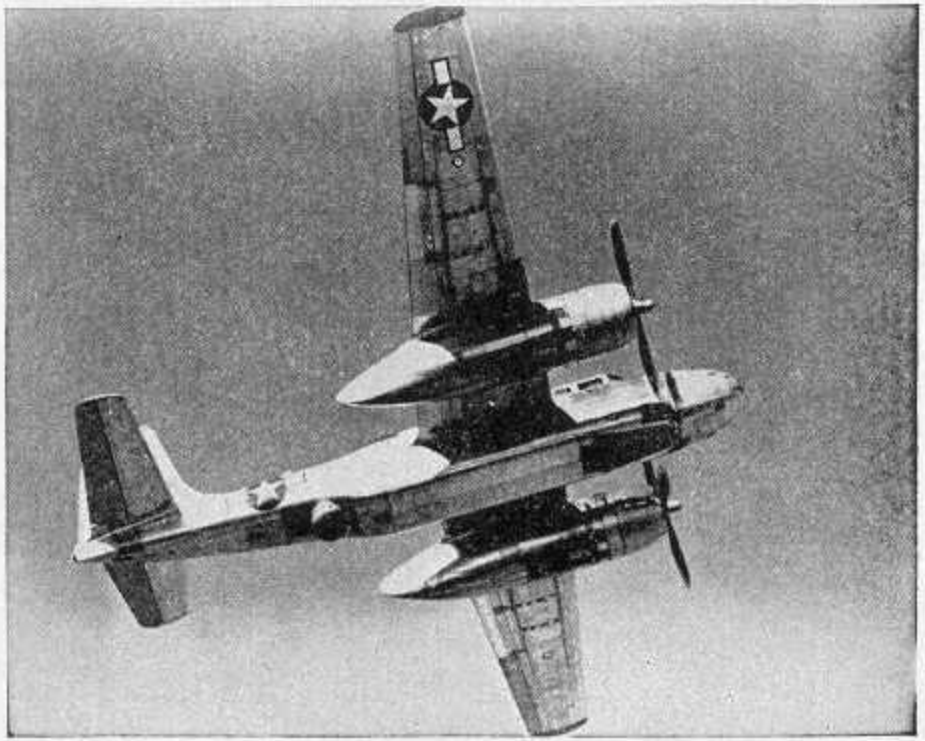


B

C



D

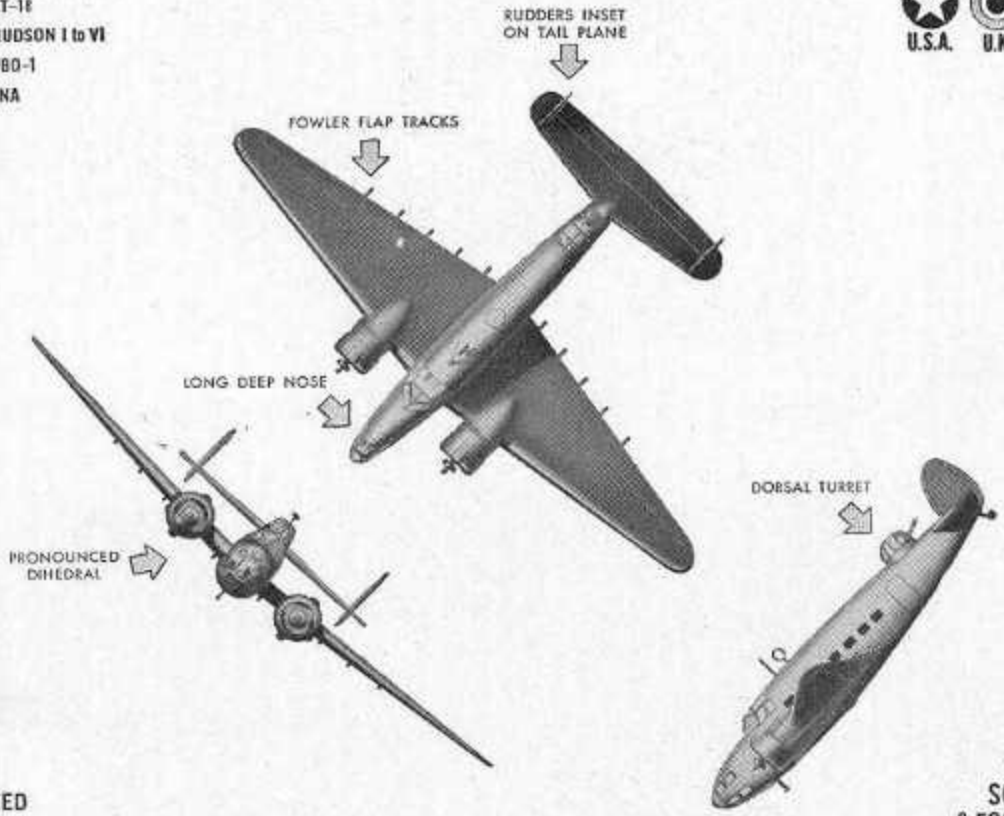


A-29 "HUDSON"

ARMY: A-29
A-29, A; A-28, A
AT-18
R. A. F.: HUDSON I to VI
NAVY: PBO-1
N. E. I., CHINA

LIGHT BOMBER

U.S.A. U.K. CHINA

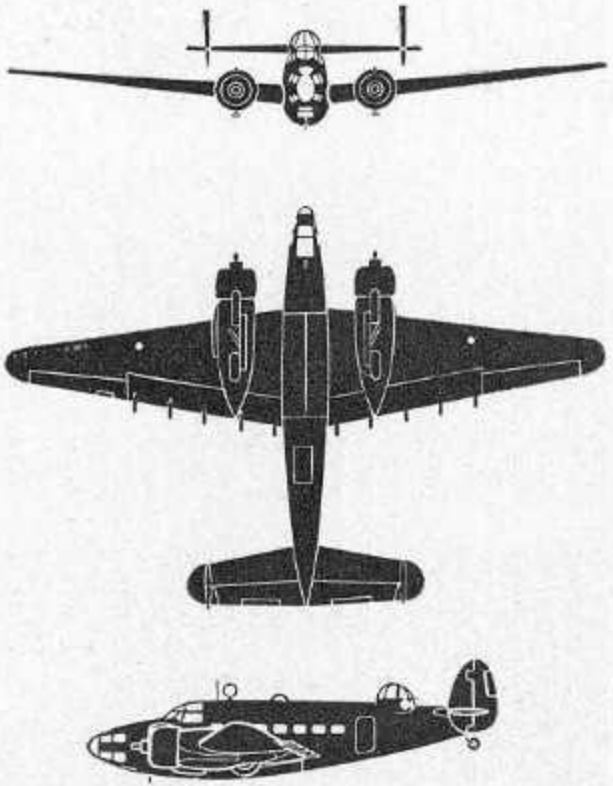


SCALE
6-FOOT MAN

LOCKHEED
U. S. A.

DISTINGUISHING FEATURES: Two-engine mid-wing monoplane. Wings taper equally to sharp rounded tips and have full dihedral. Fowler flap guides project beyond trailing edge of wing. Fuselage is short and deep with pointed transparent nose. Large dorsal turret well aft. Oval twin fins and rudders set inboard.

INTEREST: The British have called this aircraft the "Old Boomerang" because it "always comes back." It was the first American-built type to be flown across the Atlantic to England by Ferry Command pilots. The prototype which first flew in 1939 was developed from a Lockheed commercial transport. Considered by the British to be one of the air achievements of the war, the Hudson is now sharing service with the newer and larger "Ventura."



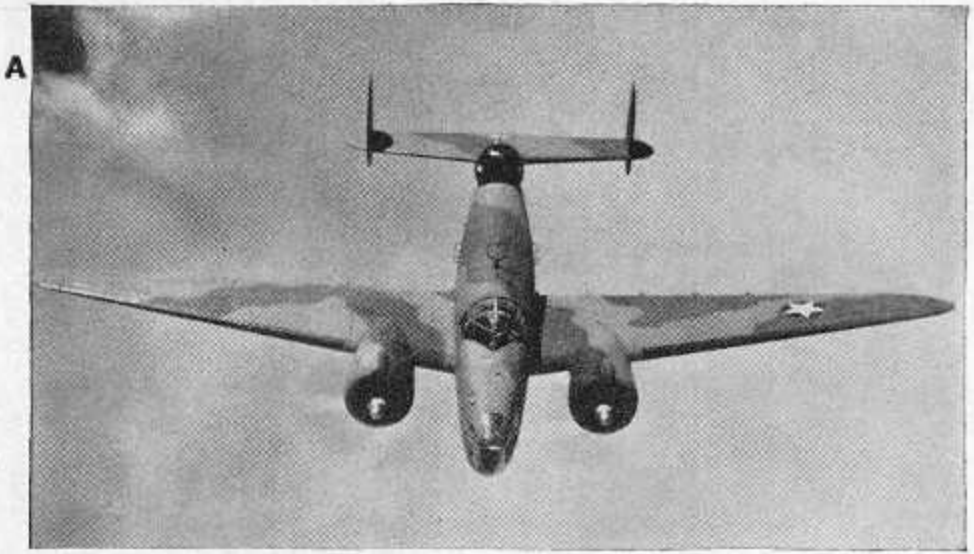
SPAN: 65 ft. 6 in.
LENGTH: 44 ft. 3 in.
APPROX. MAX. SPEED: 265 m. p. h.

SERVICE CEILING:
over 25,000 ft.

RESTRICTED

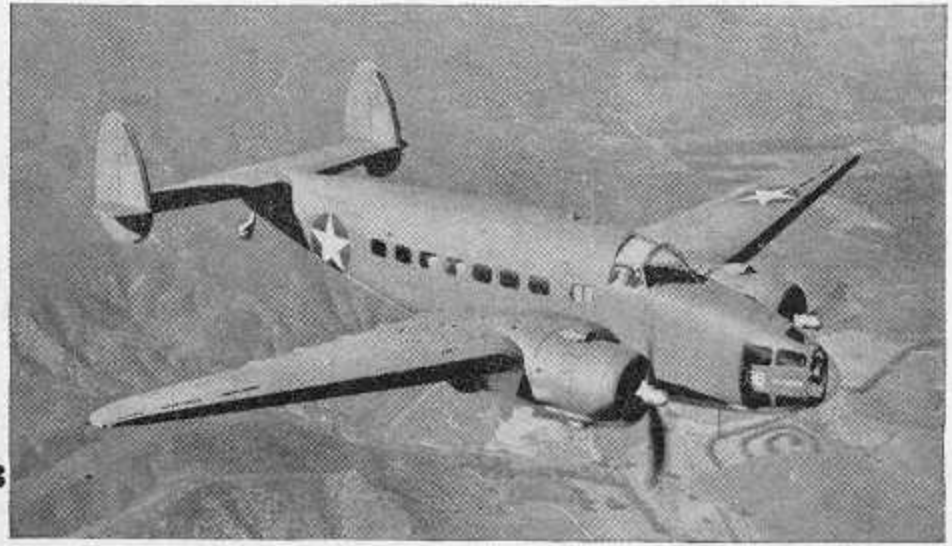
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

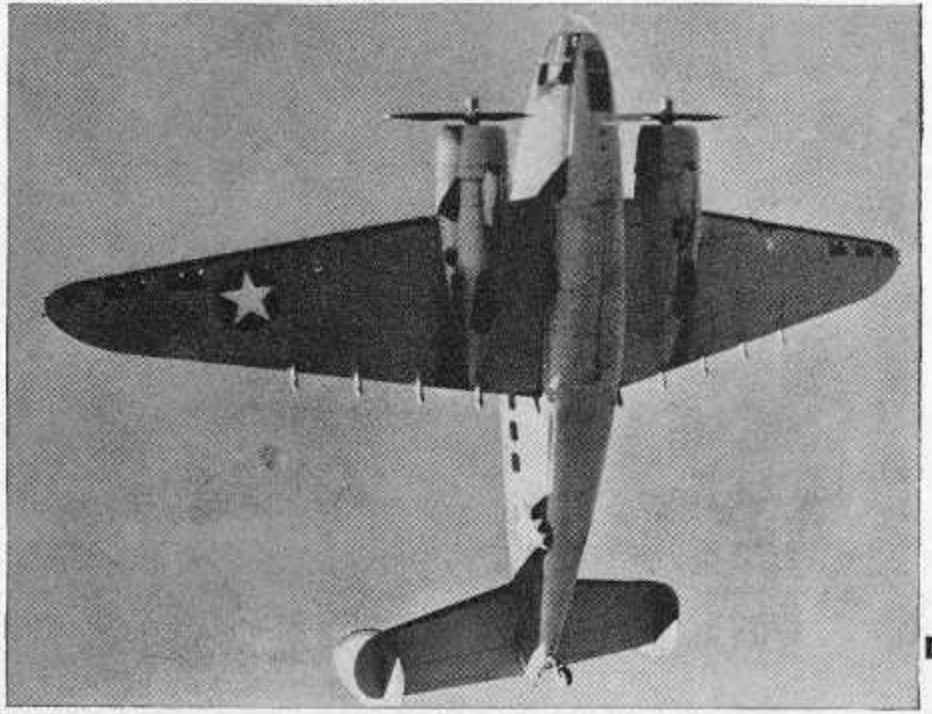


A

C



B



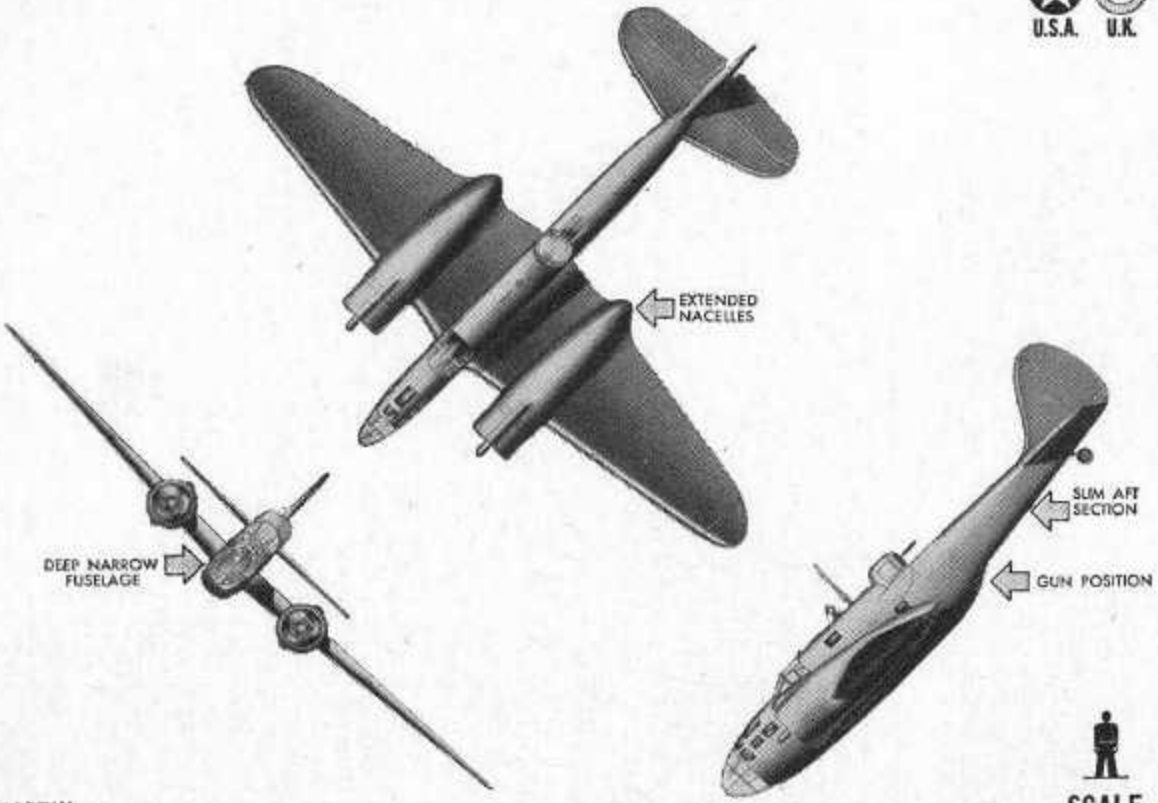
D

ARMY: A-30

R. A. F.: BALTIMORE I, II, III

LIGHT BOMBER

U.S.A. U.K.



MARTIN
U. S. A.

SCALE
6-FOOT MAN

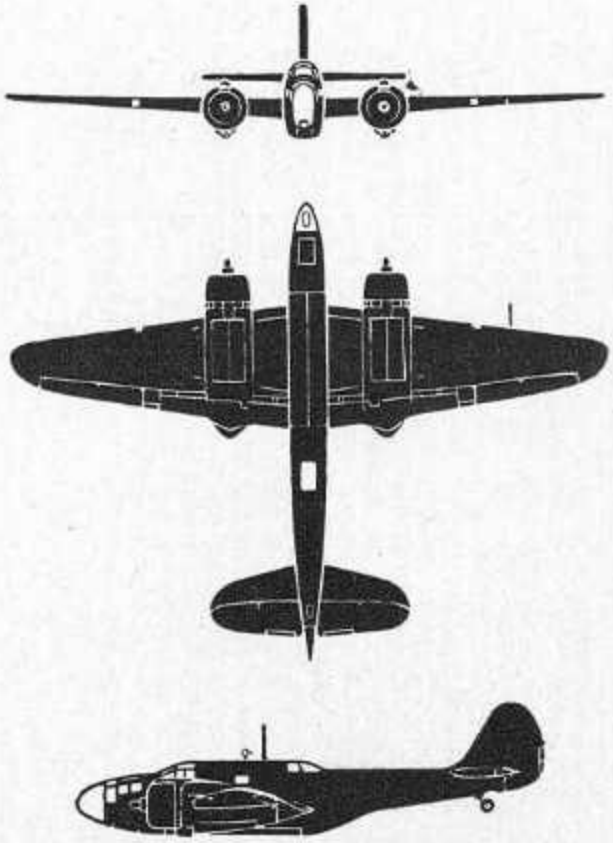
DISTINGUISHING FEATURES: Mid-wing monoplane with two radial engines. Deep, narrow fuselage with deep step on underside aft of the wing. Transparent plastic nose. Rounded single fin and rudder.

INTEREST: Although designed primarily as a light bomber, this aircraft is also well-suited for long-range reconnaissance. Its speed, defensive armament, and maneuverability make it capable of dealing effectively with enemy fighter planes. Developed from the lighter Maryland to meet specific needs of the R. A. F., it ranks as one of the highest climbing, and one of the fastest of its type. Early models do not have a top turret. Thus far, it has been in operational service almost exclusively with the Royal Air Force in the Middle East.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

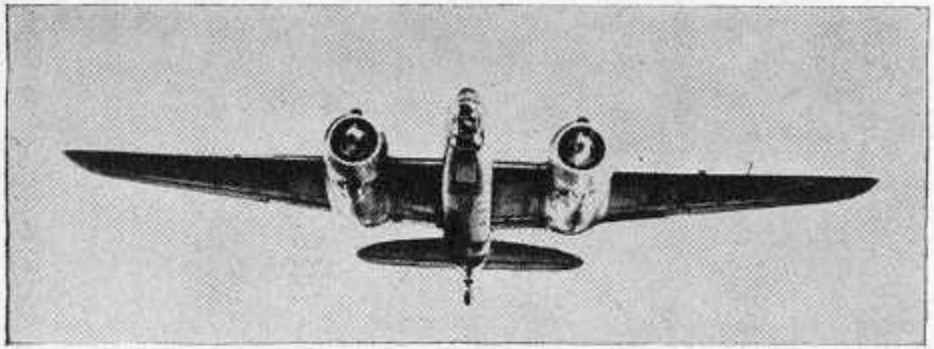
A-30 "BALTIMORE"



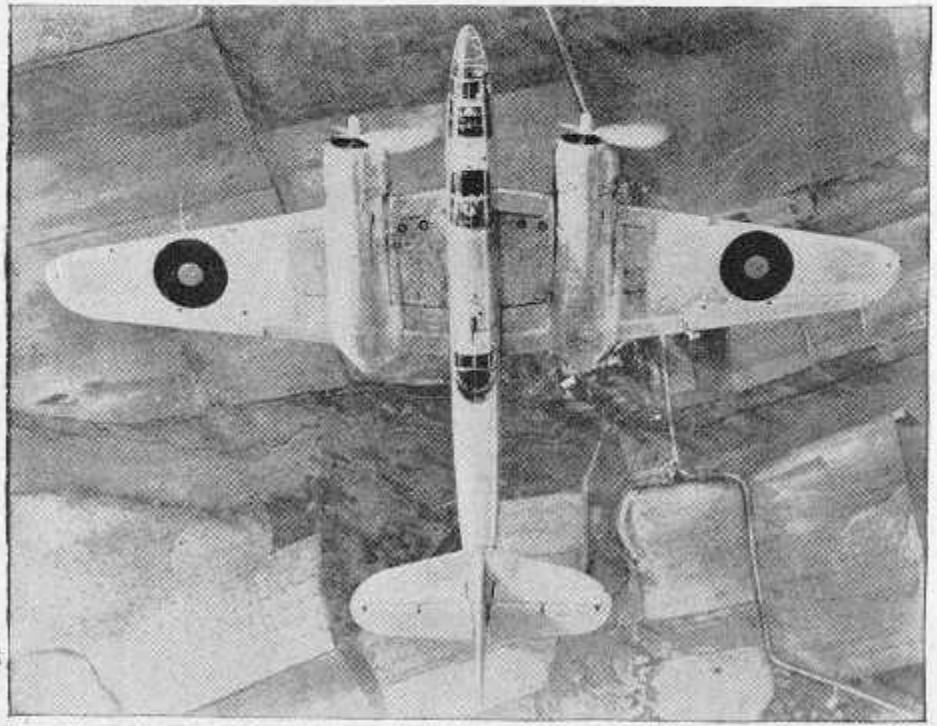
SPAN: 61 ft. 4 in.
LENGTH: 48 ft. 6 in.
APPROX. MAX. SPEED: 315 m. p. h.

SERVICE CEILING:
over 22,000 ft.

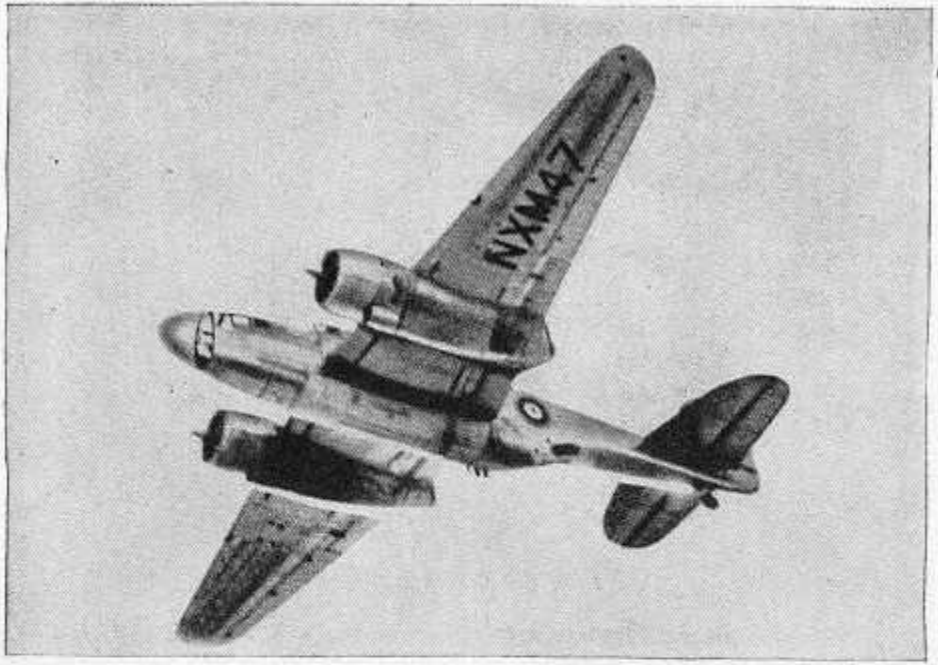
RESTRICTED



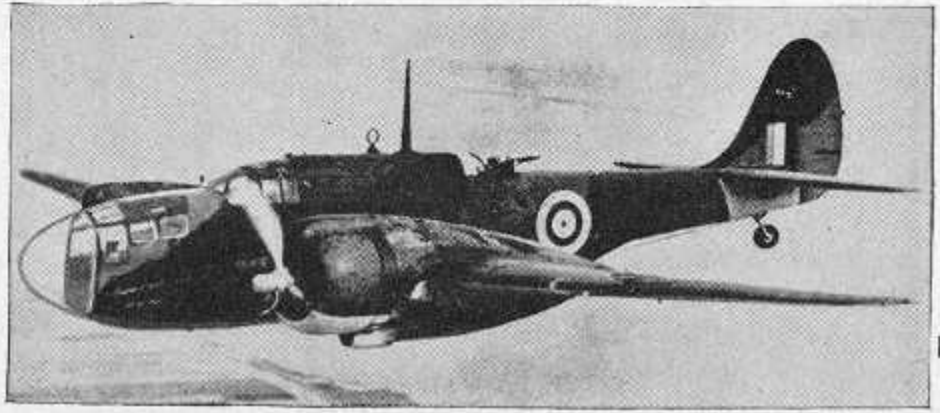
A



B



C



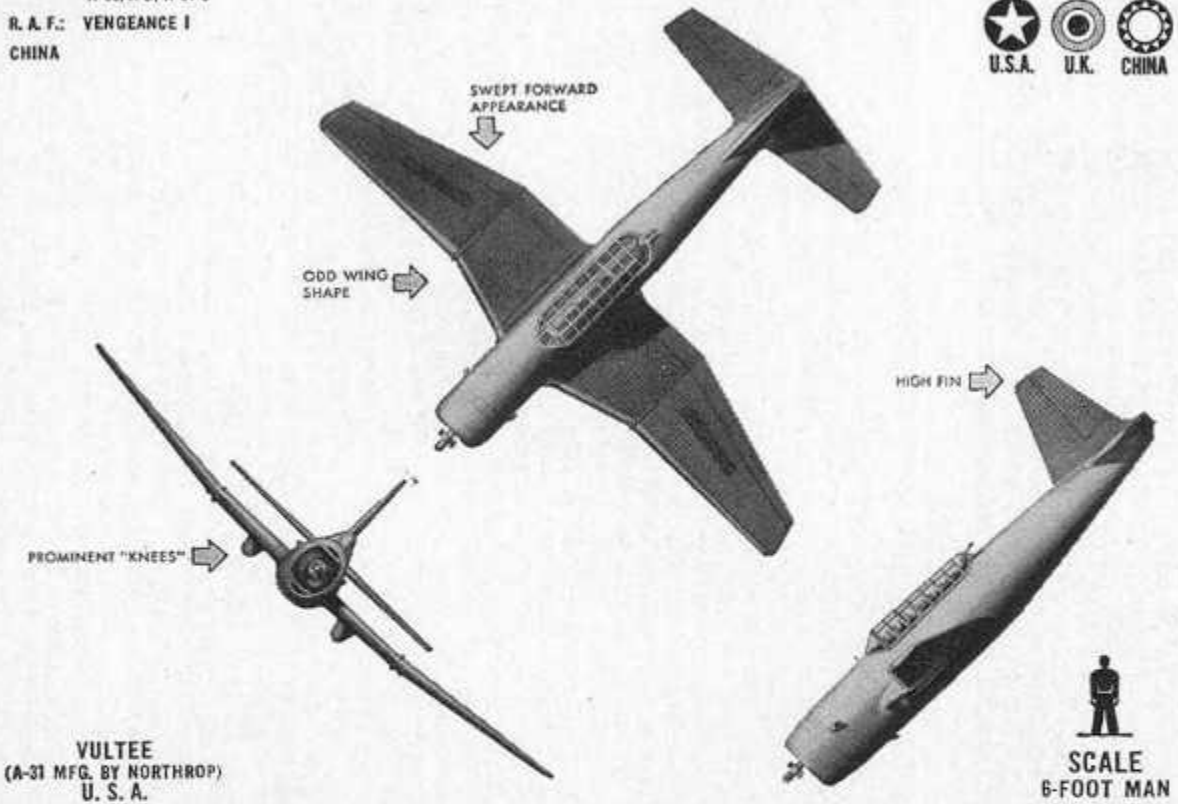
D

A-35 (A-31) "VENGEANCE"

ARMY: A-35 (A-31)
A-35, A B; A-31 C
R. A. F.: VENGEANCE I
CHINA

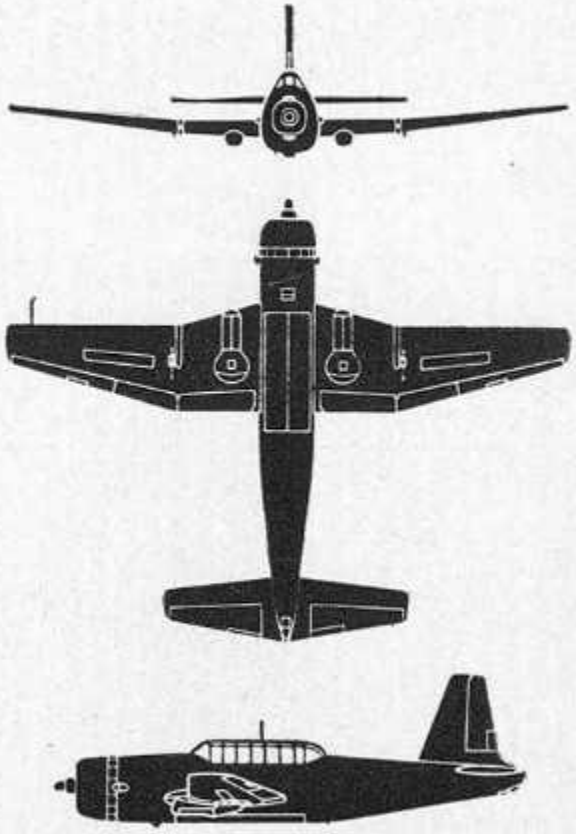
DIVE BOMBER

U.S.A. U.K. CHINA



VULTEE
(A-31 MFG. BY NORTHROP)
U. S. A.

SCALE
6-FOOT MAN



SPAN: 48 ft.
LENGTH: 40 ft.
APPROX. MAX. SPEED: over 280 m. p. h.
SERVICE CEILING: over 20,000 ft.

DISTINGUISHING FEATURES: Mid-wing monoplane with single radial engine. Center section of wing has swept-back leading edge and straight trailing edge. Outer sections have straight leading edge and sharply tapered trailing edge with blunt tips. Prominent knuckles show at under-carriage attachment. Cockpit enclosure is long and horizontal. Very high triangular fin and rudder with square top.

INTEREST: The British ordered this very maneuverable two-place dive bomber in July 1940, just after the German Ju 87–B (Stuka) had figured so prominently in the defeat of France. However, since that time, it has been shown that in land warfare, dive bombers are extremely vulnerable in face of adequate fighter opposition and well organized anti-aircraft fire. It is therefore more likely that the Vengeance will be used for general reconnaissance purposes except where local conditions favor dive bombing. A modified version is coming into use by the U. S. Navy as the TBV–1.

APRIL 1943
* FROM DATA CURRENTLY AVAILABLE

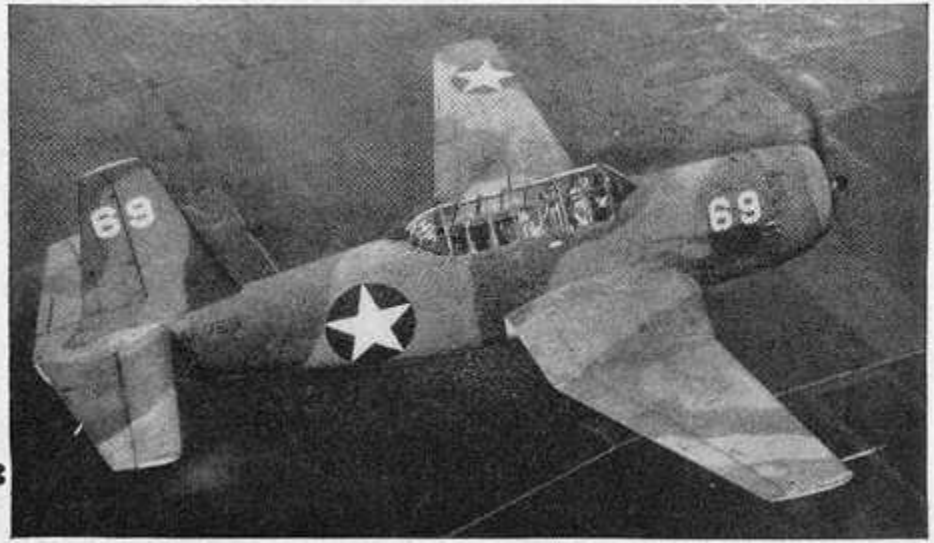
WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A

C

B



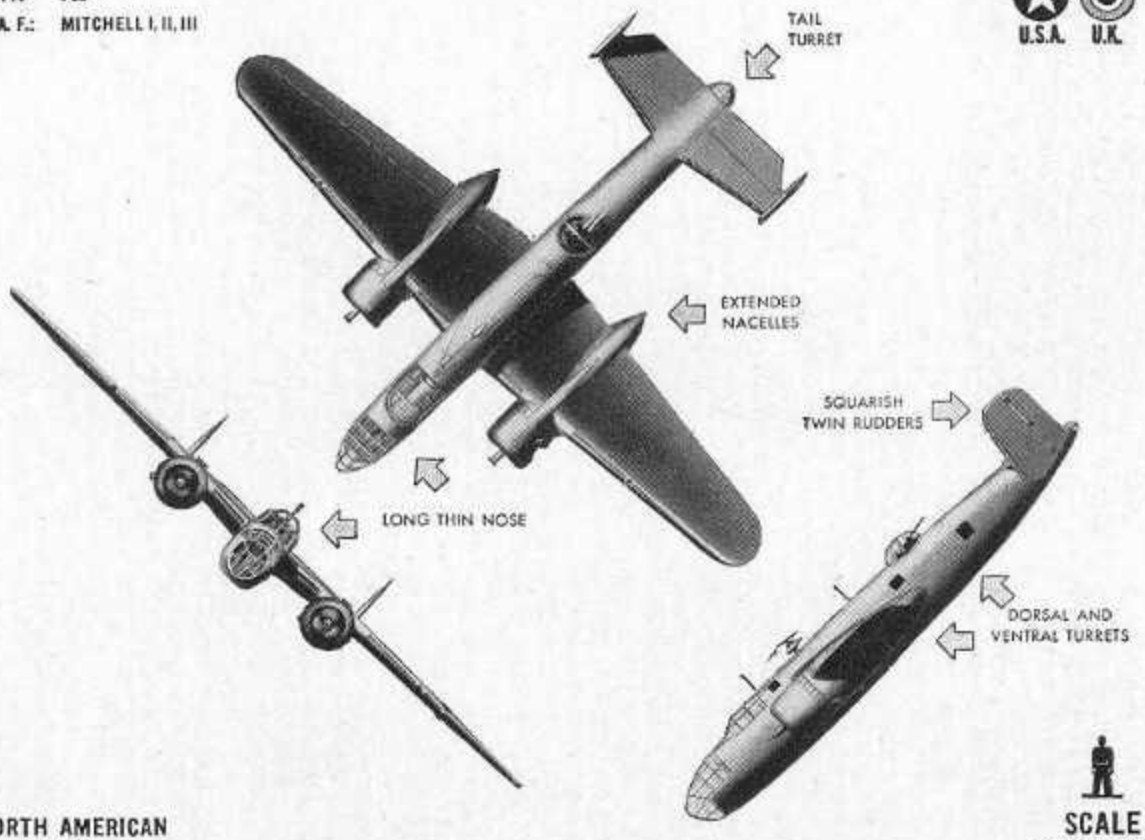
D

B-25 "MITCHELL"

ARMY: B-25 C
B-25 series
NAVY: PBJ
R. A. F.: MITCHELL I, II, III

MEDIUM BOMBER

U.S.A. U.K.

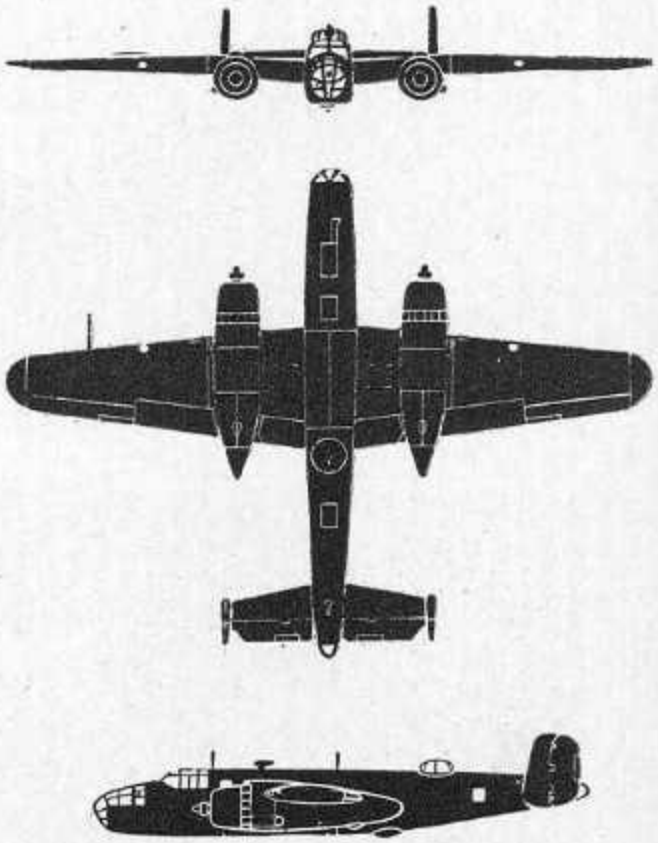


SCALE
6-FOOT MAN

NORTH AMERICAN
U. S. A.

DISTINGUISHING FEATURES: Two radial engines underslung below wings. Nacelles extend beyond trailing edge of wing. High outboard twin fins and rudders sloped like a lopsided rectangle. Gull wing effect due to positive dihedral on inboard panel only. Wings tapered on both edges with more pronounced taper on trailing edge. Long transparent nose.

INTEREST: The B-25 was named after the late Gen. "Billy" Mitchell. It has gained considerable publicity as the result of its use in the bombing raid on Tokyo in April 1942. It is in use on nearly all of the Allied war fronts and has performed well for the British in their African campaigns.

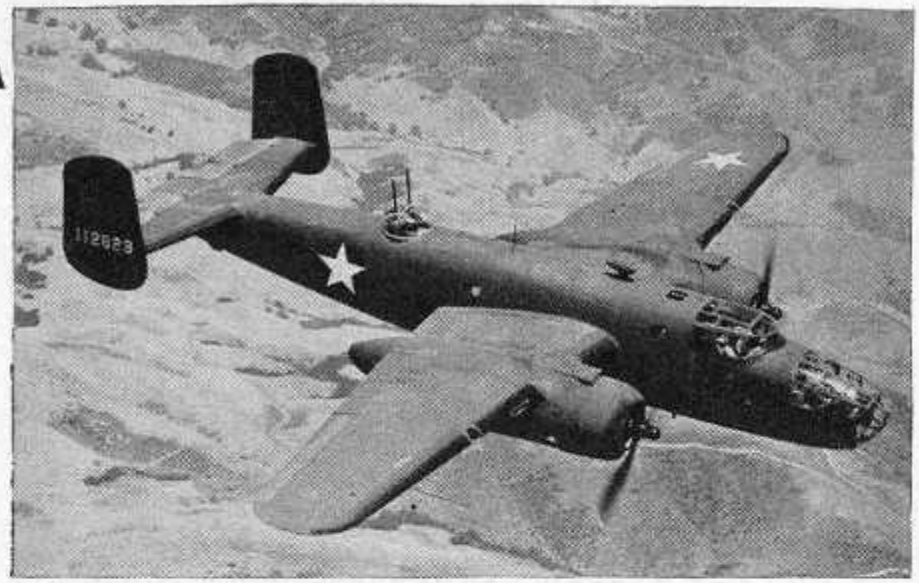


SPAN: 67 ft. 6 in.
LENGTH: 54 ft. 1 in.
APPROX. MAX. SPEED: 300 m. p. h.
SERVICE CEILING: 25,000 ft.

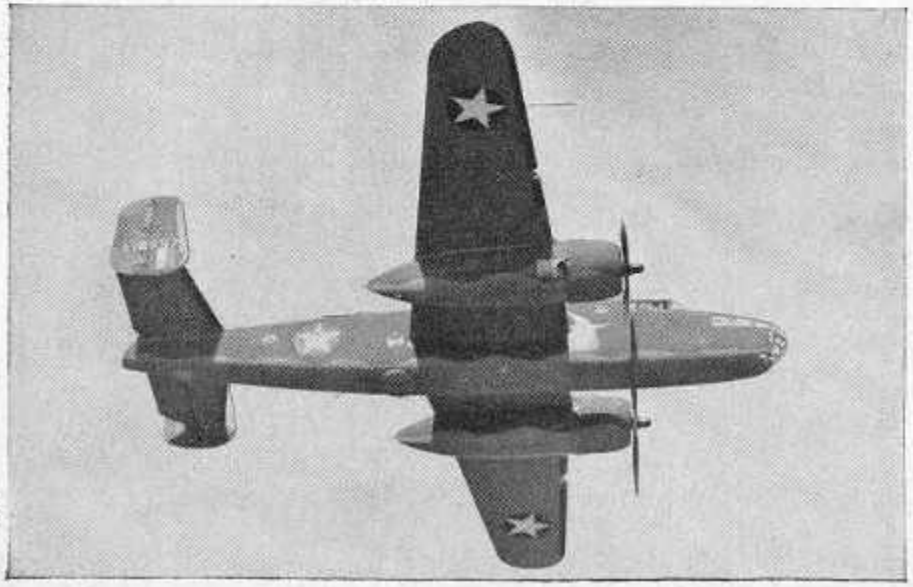
RESTRICTED

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

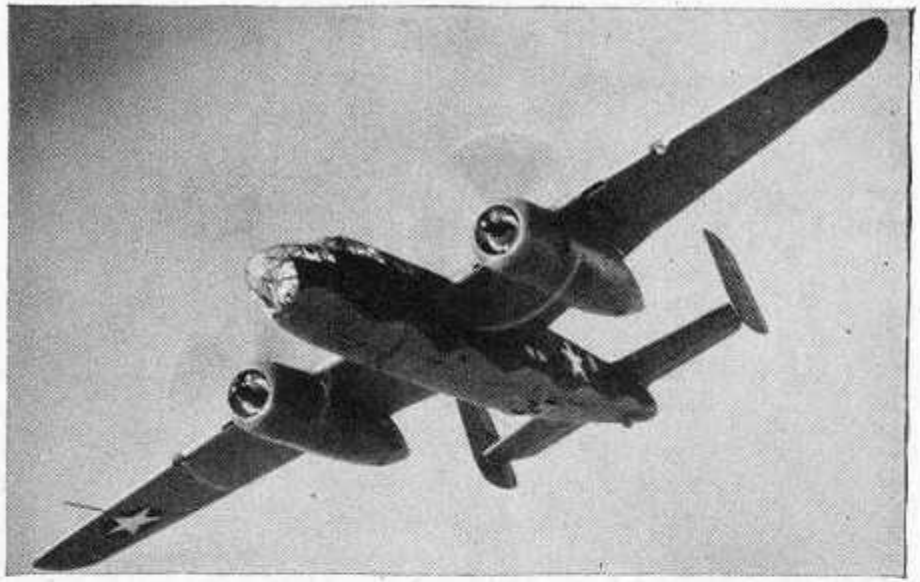
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3



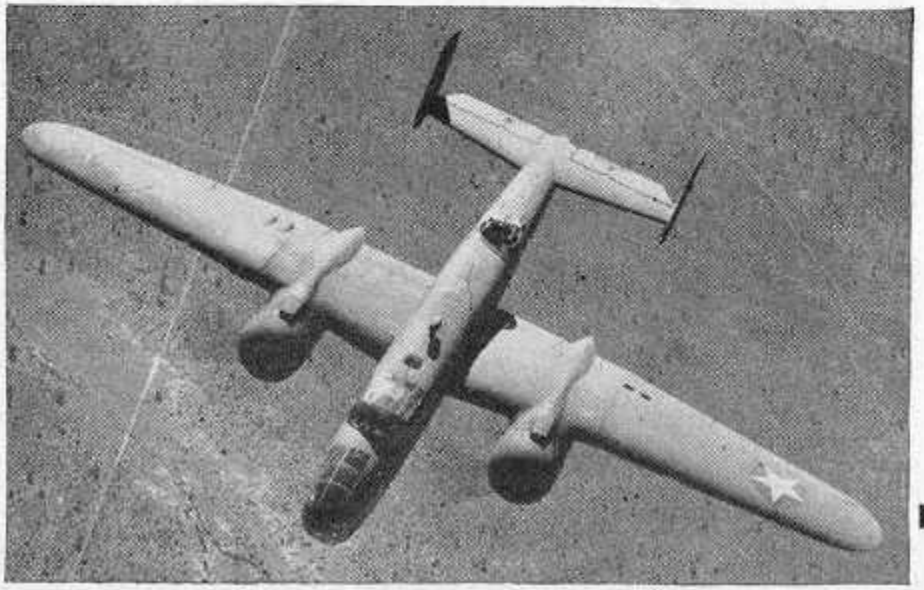
A



B



C



D

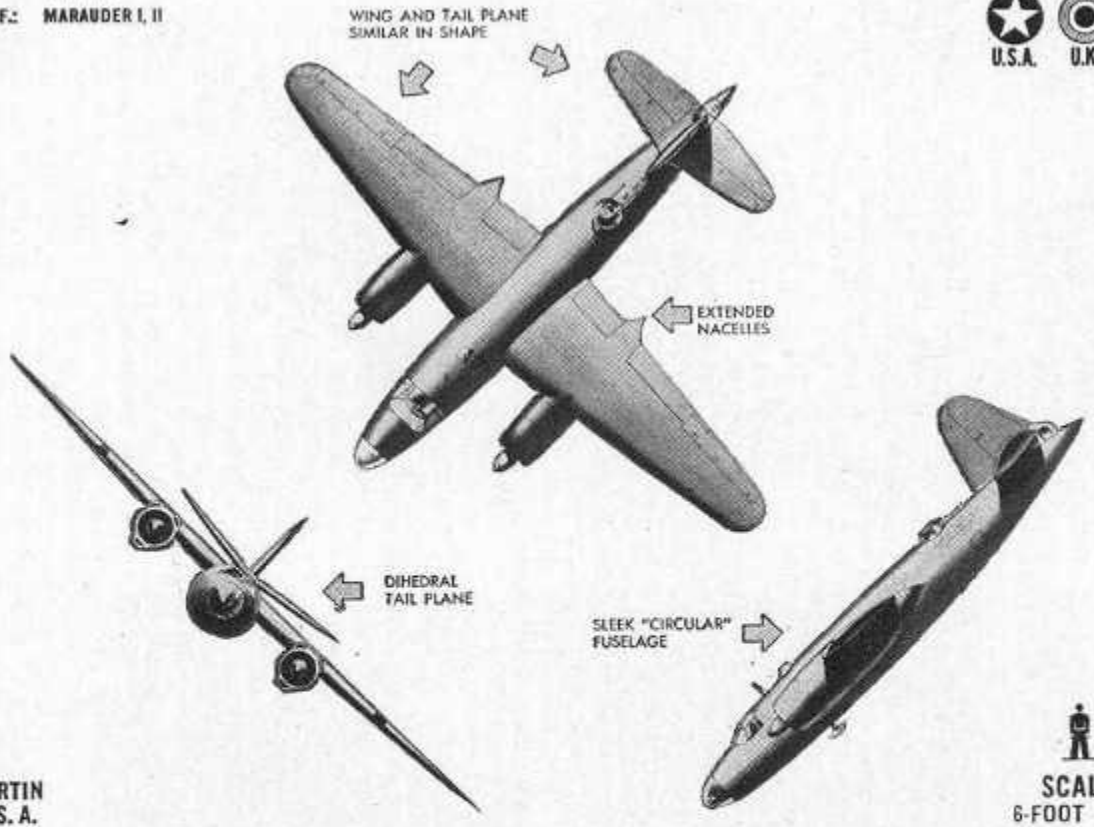
ARMY: B-26B, C
B-26 series

B. A. F.: MARAUDER I, II

MEDIUM BOMBER

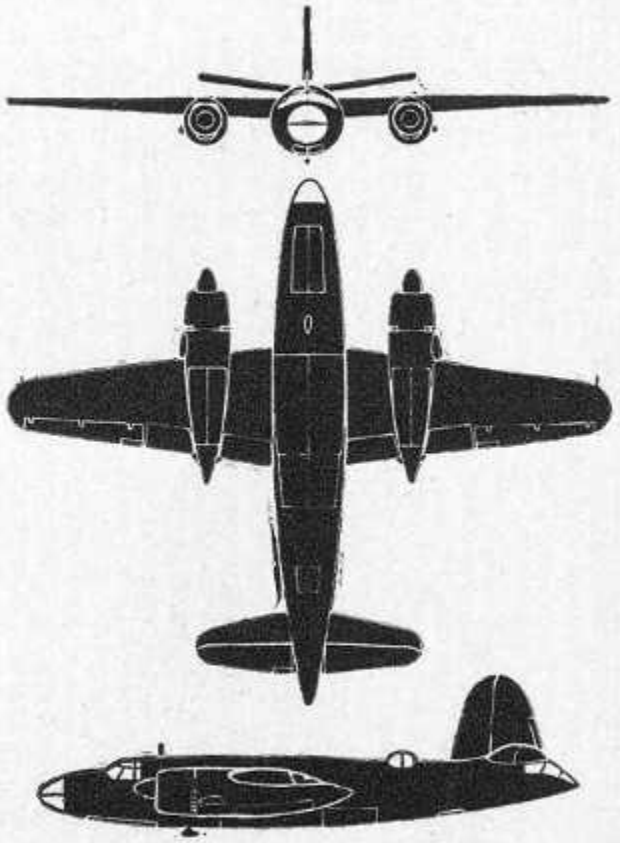
U.S.A. U.K.

B-26 "MARAUDER"



MARTIN
U. S. A.

SCALE
6-FOOT MAN



SPAN: 71 ft.
LENGTH: 58 ft. 3 in.
APPROX. MAX. SPEED: over 300 m. p. h.
SERVICE CEILING: over 23,000 ft.

DISTINGUISHING FEATURES: Shoulder wing monoplane with long cigar-shaped fuselage. Sharply tapered wings with rounded tips and no dihedral. High single fin and rudder with rounded top. Tail plane has marked dihedral. Radial engines underslung beneath wings with long nacelles projecting beyond trailing edge. Rear fuselage fairing projects downward and beyond the tail assembly.

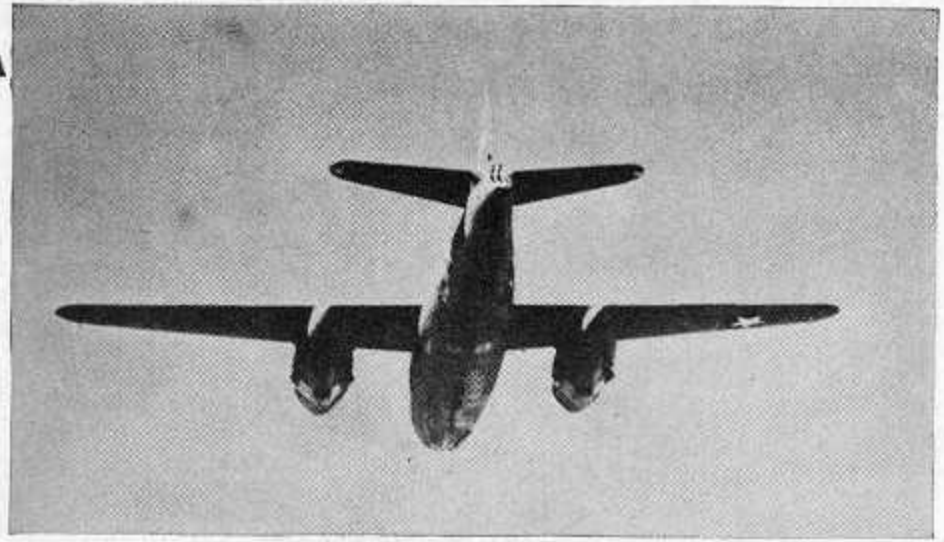
INTEREST: No Axis aircraft of the same class matches the B-26 for speed, range, or bomb-carrying capacity. In the Battle of Midway, it was used as a torpedo bomber—the first time that land-based torpedo bombers of the U. S. Army had been in action. One of them came back with over 500 bullet holes in fuselage and wings. The design for this aircraft was completely new and owes little to any previous conception. The early models, the B-26 and B-26A, had a wing span of 65 feet.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

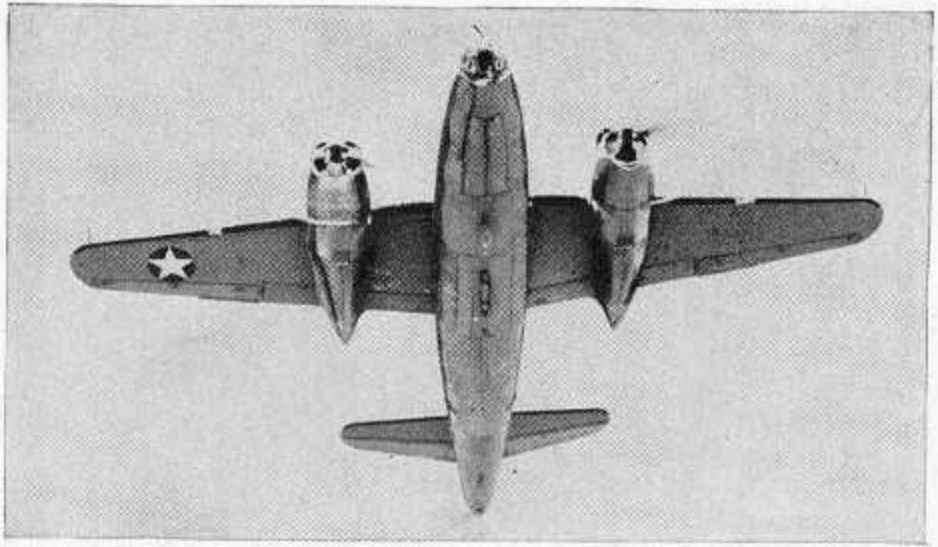
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

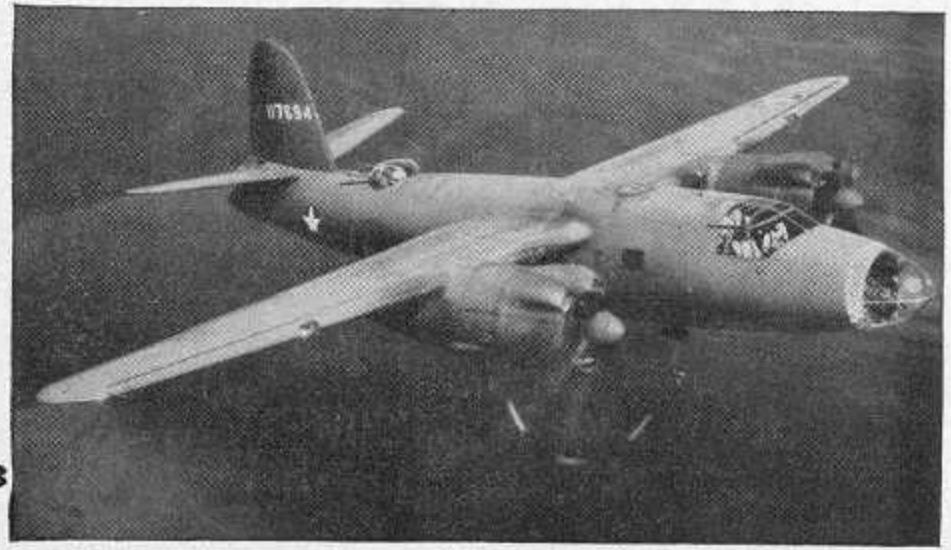
A



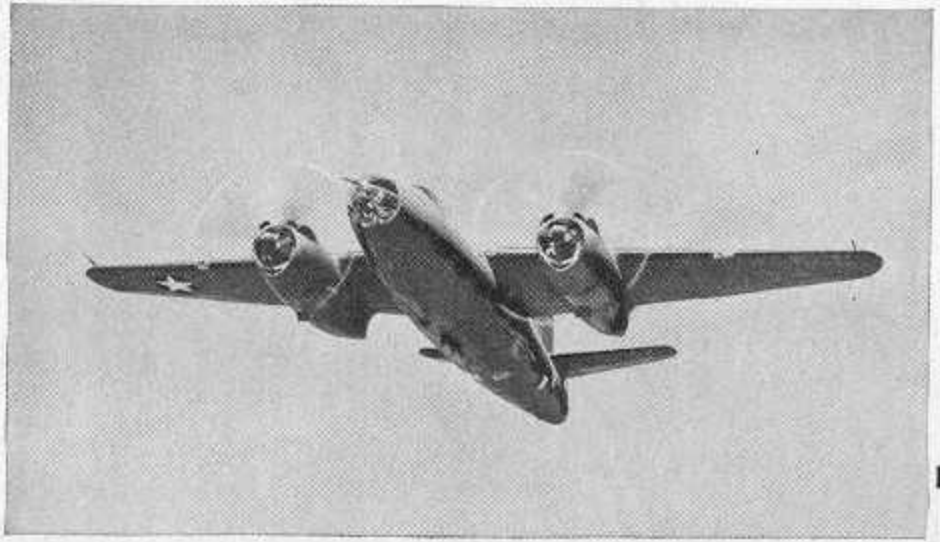
C



B



D

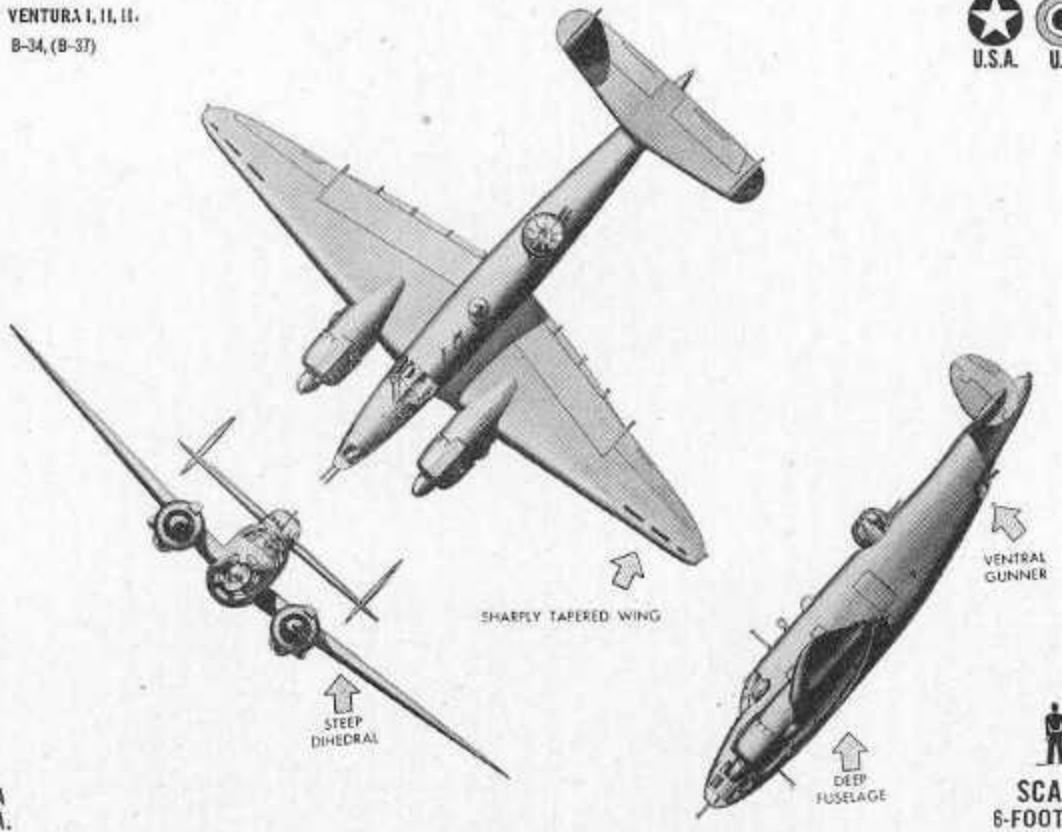


NAVY: PV-1
PV-1, 3
R. A. F.: VENTURA I, II, III.
ARMY: B-34, (B-37)

MEDIUM BOMBER

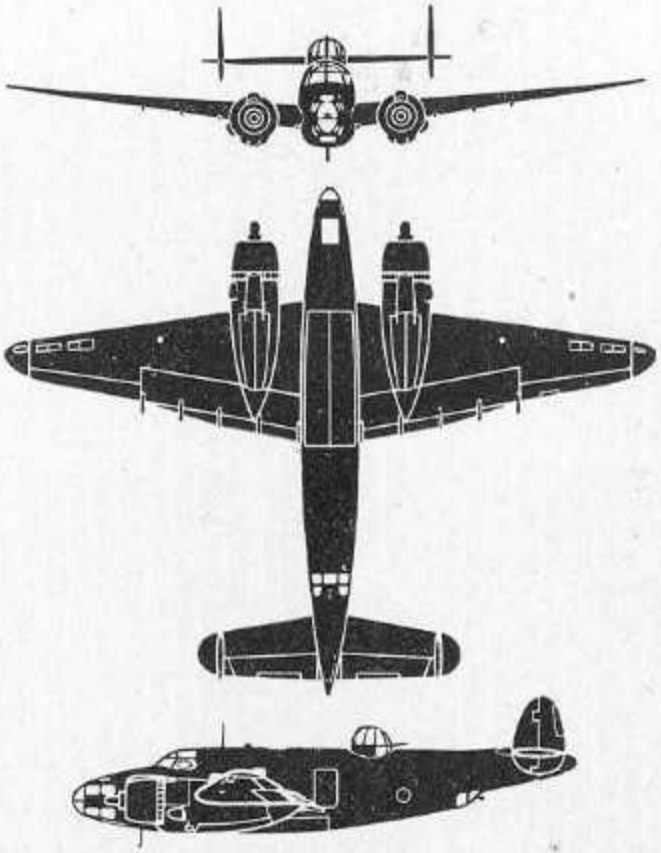
U.S.A. U.K.

PV "VENTURA"



VEGA
U. S. A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Mid-wing monoplane. Both edges of wing have marked taper. Fowler flap guides are visible. Radial motors are underslung in long nacelles. The fuselage is heavy with a power turret aft of trailing edge of wings. Bottom line of fuselage is broken to accommodate rear guns. Twin fins and rudders are egg-shaped, mounted high and inboard.

INTEREST: The "Ventura" was developed from the Hudson (A-29), which it closely resembles in size and appearance. It has much more powerful engines, however. The prototype of the PV-1 first flew in 1941 and operational models were first reported in action during December 1942 in raids over Holland and Germany. The Army version (B-34) of this aircraft is now in use, along with the A-29, by the R. A. F. Coastal Command for general reconnaissance and other duties.

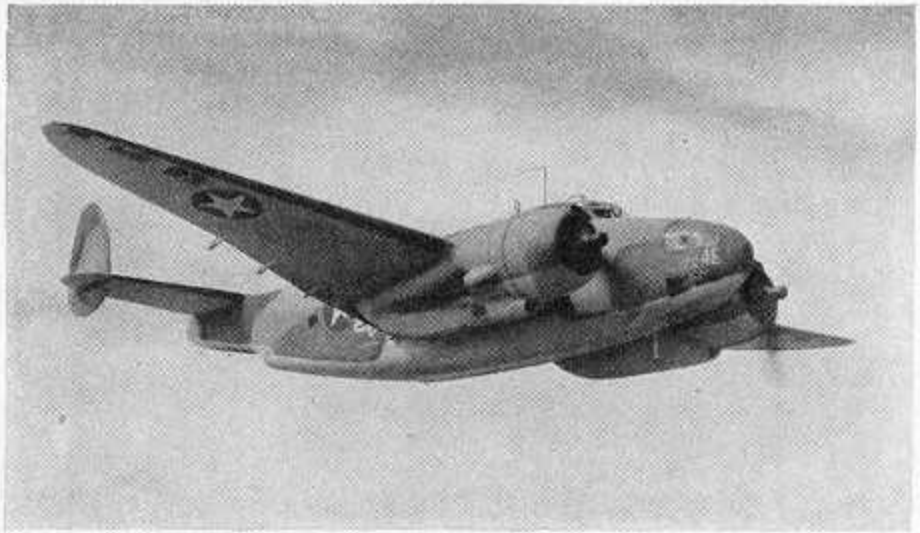
SPAN: 65 ft. 6 in.
LENGTH: 51 ft. 5 in.
APPROX. MAX. SPEED: over 300 m. p. h.
SERVICE CEILING: over 32,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

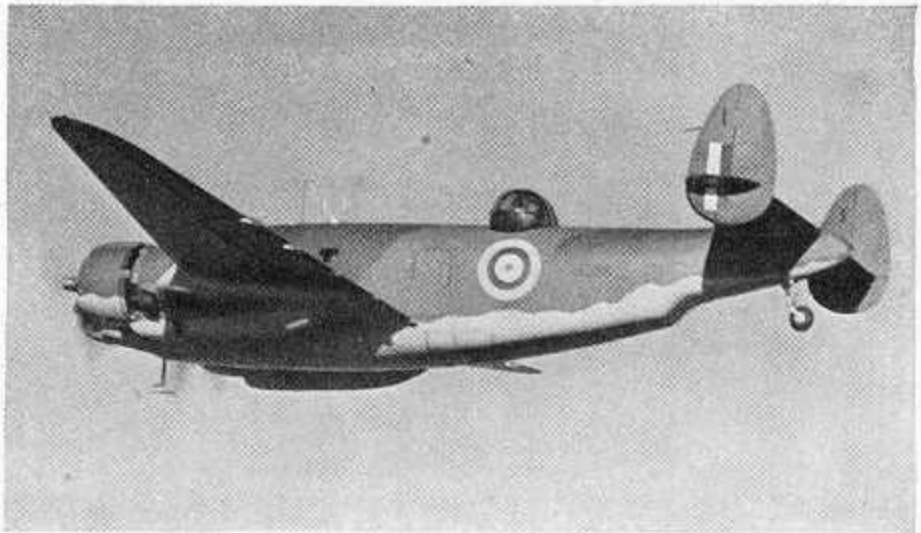
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 5

RESTRICTED

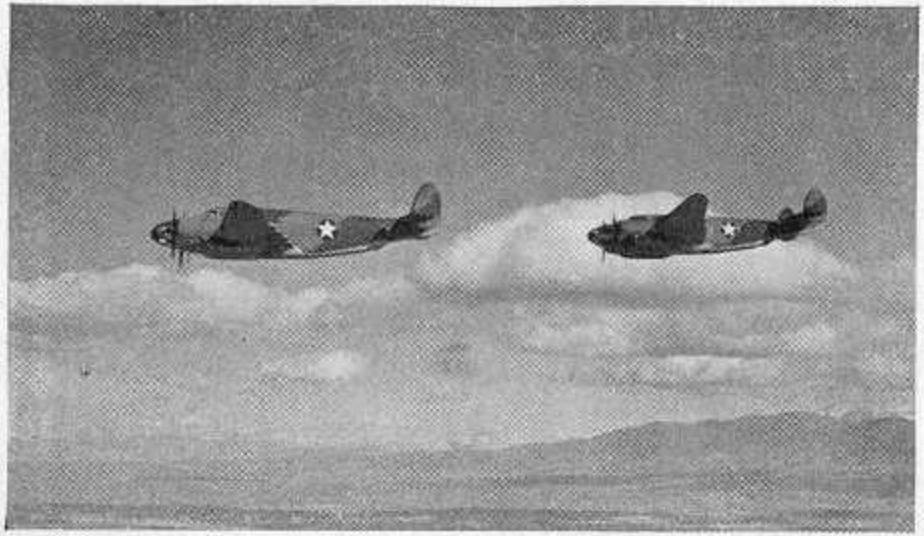
A



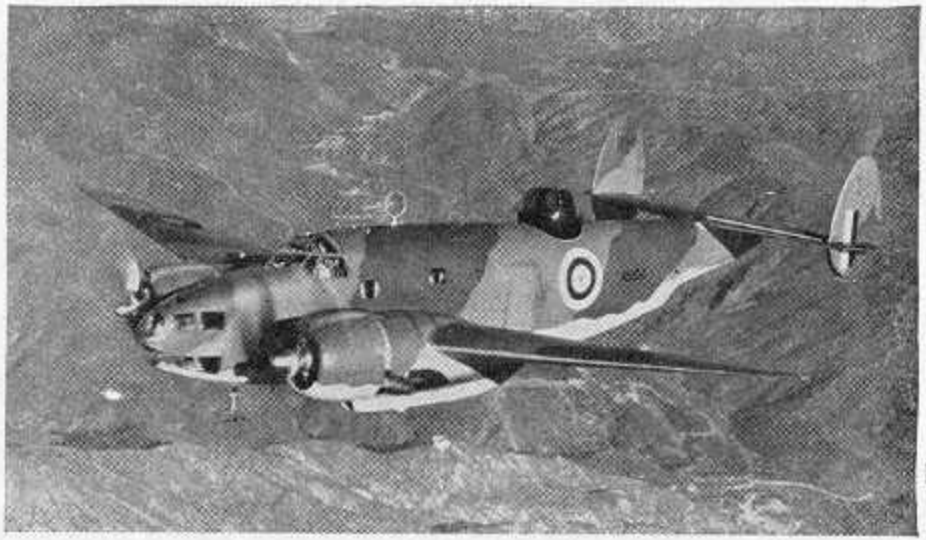
C



B



D



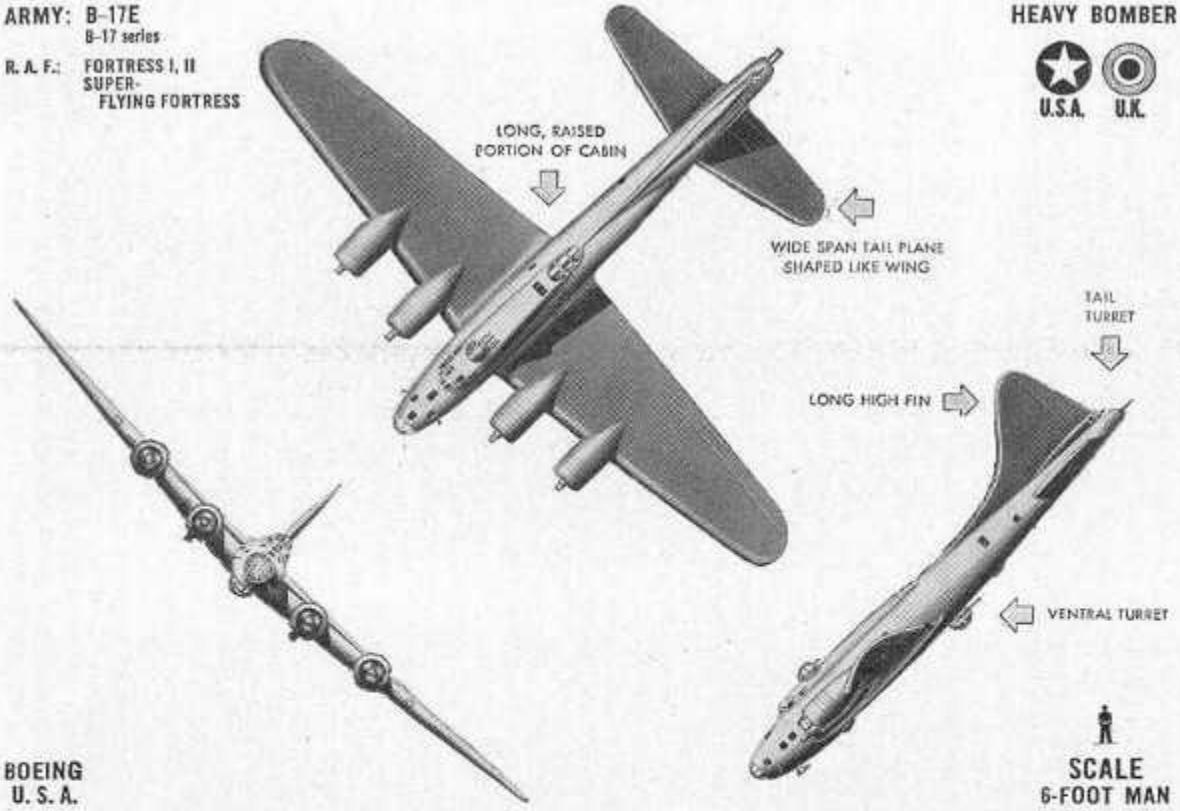
B-17 "FLYING FORTRESS"

ARMY: B-17E
B-17 series

R. A. F.: FORTRESS I, II
SUPER-
FLYING FORTRESS

HEAVY BOMBER

U.S.A. U.K.



BOEING
U. S. A.

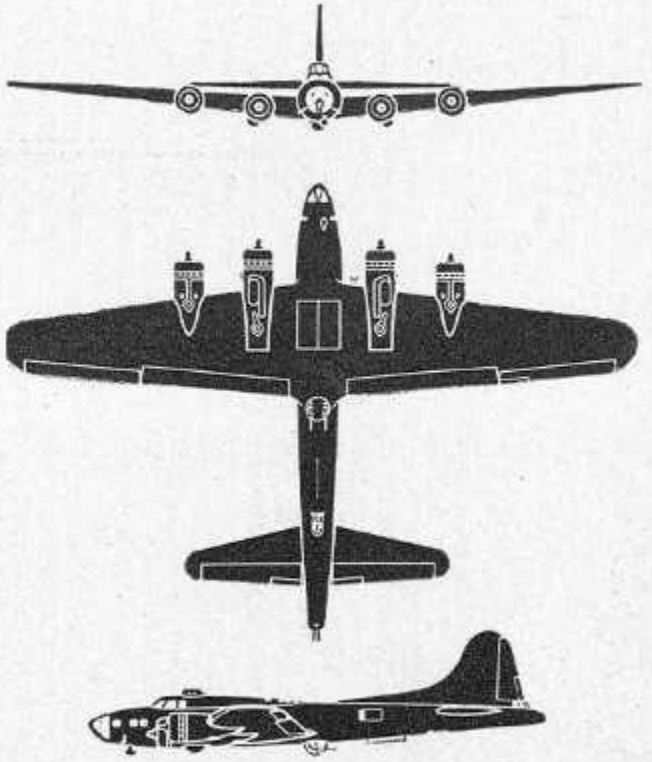
SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Four-engine, low-wing monoplane. Wings equally tapered with rounded tips and full dihedral. Long, narrow fuselage. Gun turret on top of fuselage just aft of pilot's cockpit enclosure. Large ventral turret aft of wings. Tail has broad single fin and rudder with fin faired far forward into fuselage. Large stabilizer and elevator, similar in shape to the wing.

INTEREST: Designed for high altitude, daytime precision bombing of restricted targets, the B-17 was the first long-range American bomber. Intended primarily for long flights over the Pacific, great fuel capacity rather than tremendous bomb load was emphasized in the individual design. It now does effective work, however, for the Army Air Forces in raids at shorter range in Europe, North Africa, and in the Southwest Pacific. The relative lack of armament characterizing early models is now corrected so it is possible on some missions to operate under the protection of its own guns without fighter escort. The early models, B-17 to B-17D had a much smaller fin with straight leading edge intersecting the fuselage back of the L. E. of the stabilizer.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3



SPAN: 103 ft. 10 in.
LENGTH: 74 ft. 9 in.
APPROX. MAX. SPEED: 310 m. p. h.

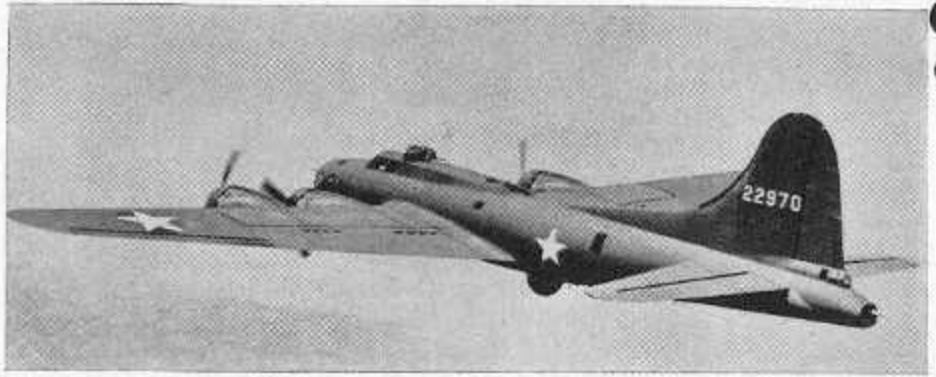
SERVICE CEILING:
over 35,000 ft.

RESTRICTED

A

B

C

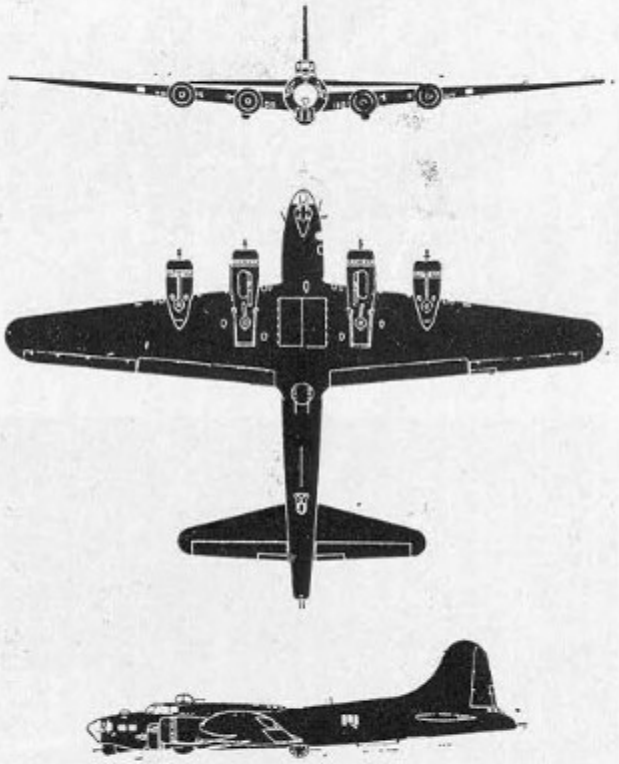


D

HEAVY BOMBER

U. S. A. U. K.

B-17 FLYING FORTRESS



ARMY: B-17G
B-17 series
RAF: Fortress I, II
BOEING, DOUGLAS, VEGA
U. S. A.

DISTINGUISHING FEATURES: Low-wing monoplane with four radial engines. Equi-tapered wing with rounded tips and full dihedral. Long, narrow fuselage. Large distinctive fin and rudder fairing into fuselage. Tailplane miniature of wing. Fuselage extends aft of tailplane. Short nose.

INTEREST: The first long-range American bomber, the B-17 was designed primarily for long flights over the Pacific. Large fuel capacity rather than heavy bomb load was emphasized in its initial design. The B-17 has been progressively modified as necessitated by the conditions of air combat. Greatest use up to the present has been the employment as a daytime precision bomber over the continent of Europe, where it has done very effective work on restricted targets. It has also seen much action in the Pacific. Powered by four Wright air-cooled radial engines.

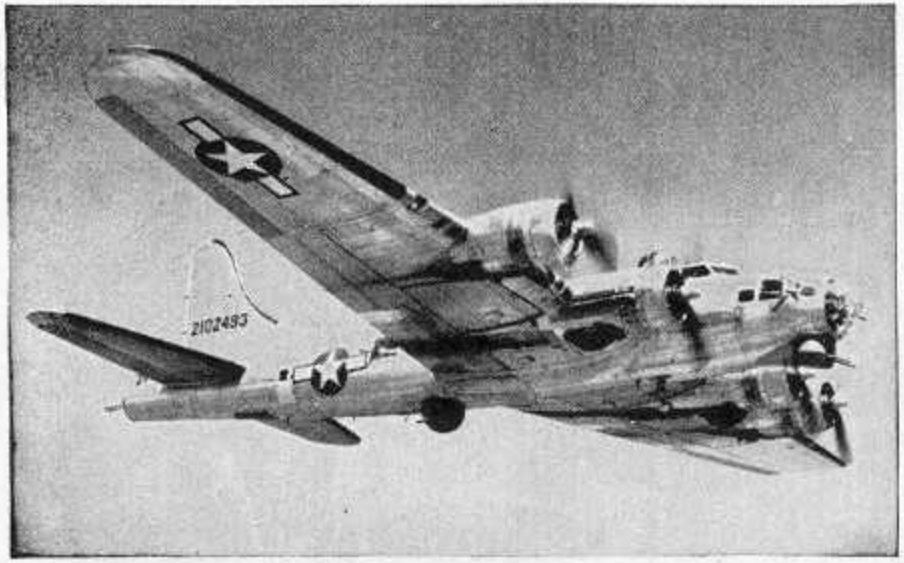
SPAN: 103 ft. 10 in.
LENGTH: 74 ft. 9 in.
APPROX. MAX. SPEED: 290 m.p.h. at 25,000 ft.
SERVICE CEILING: Approx. 36,000 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

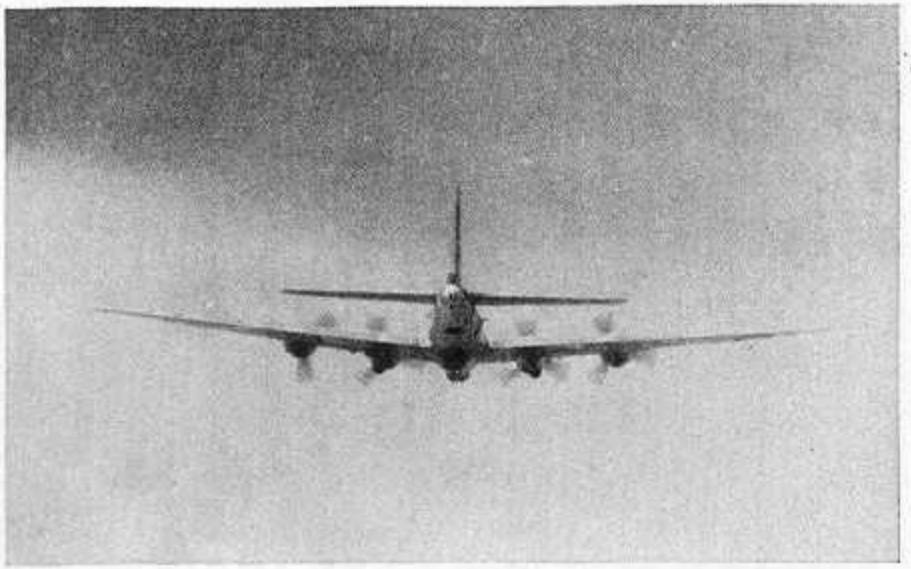
SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

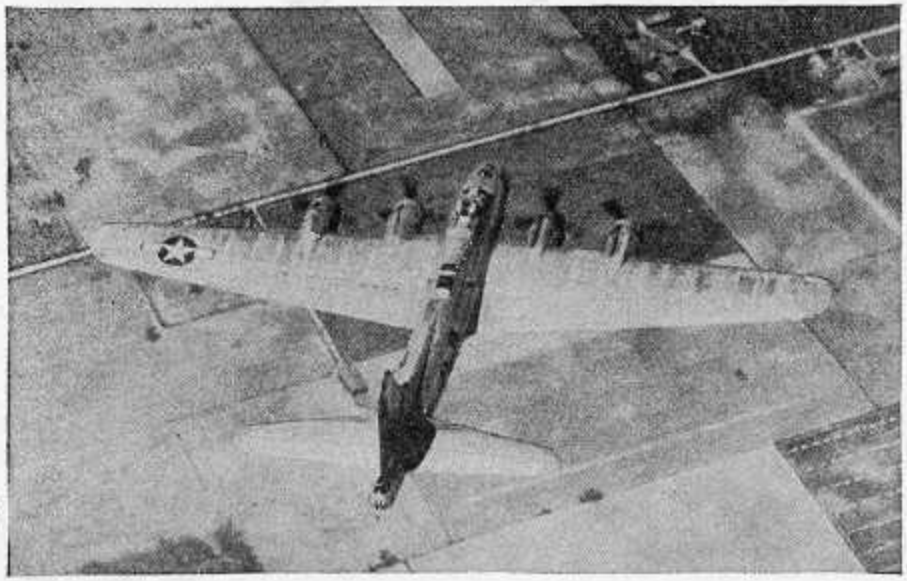
A



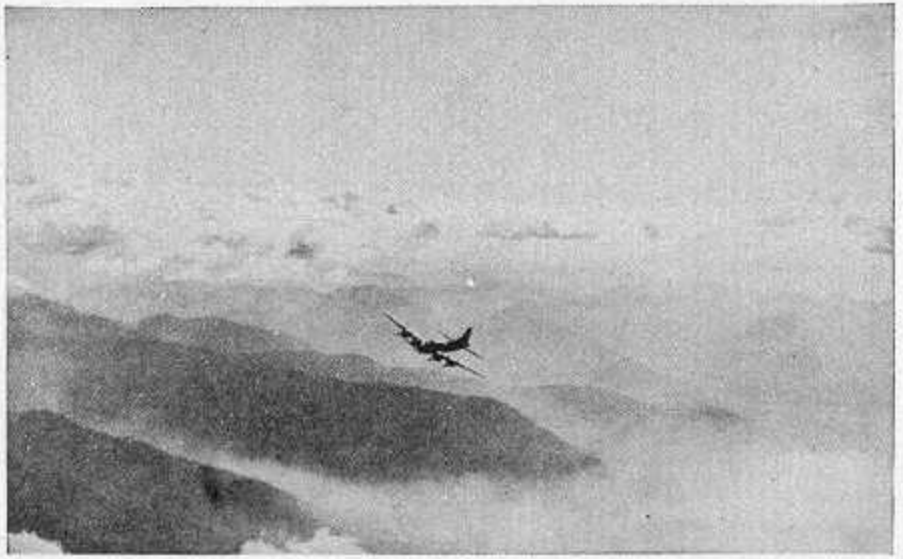
C



B



D



B-24 "LIBERATOR"

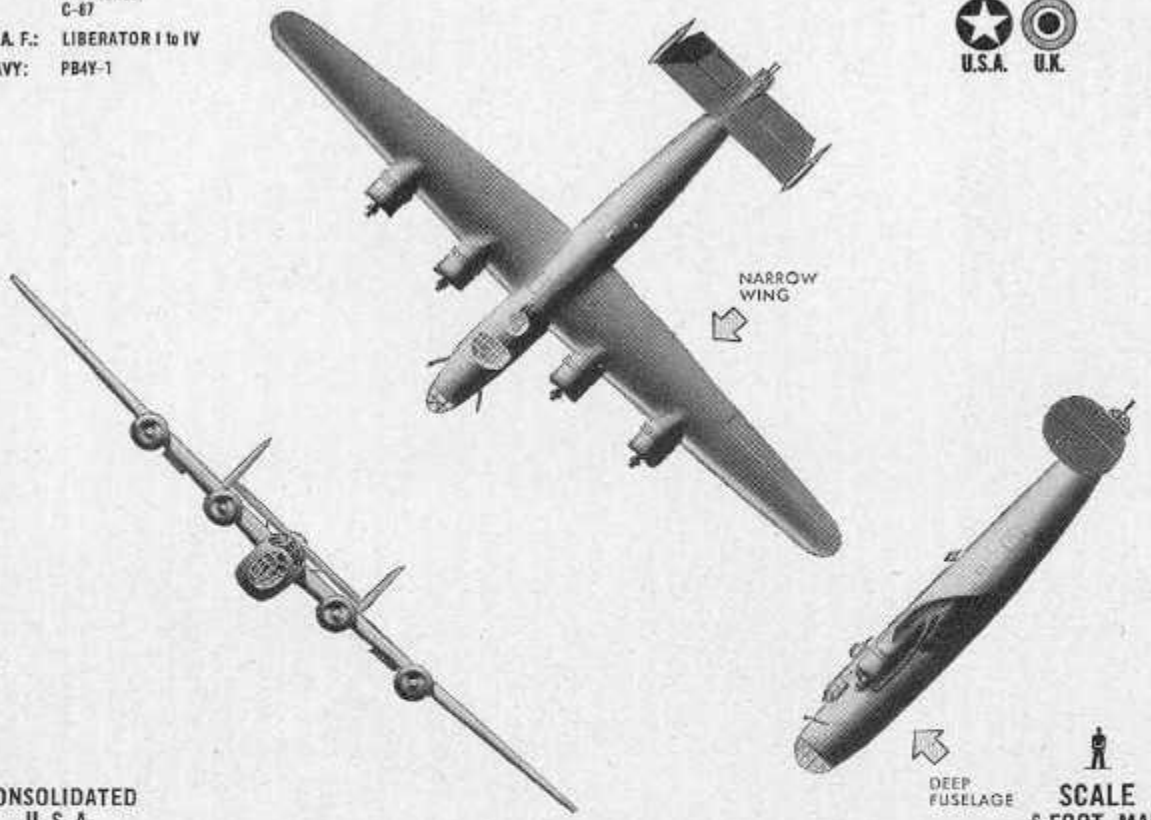
ARMY: B-24E
B-24 series
C-87

R. A. F.: LIBERATOR I to IV

NAVY: PB4Y-1

HEAVY BOMBER—TRANSPORT

U.S.A. U.K.



CONSOLIDATED
U. S. A.

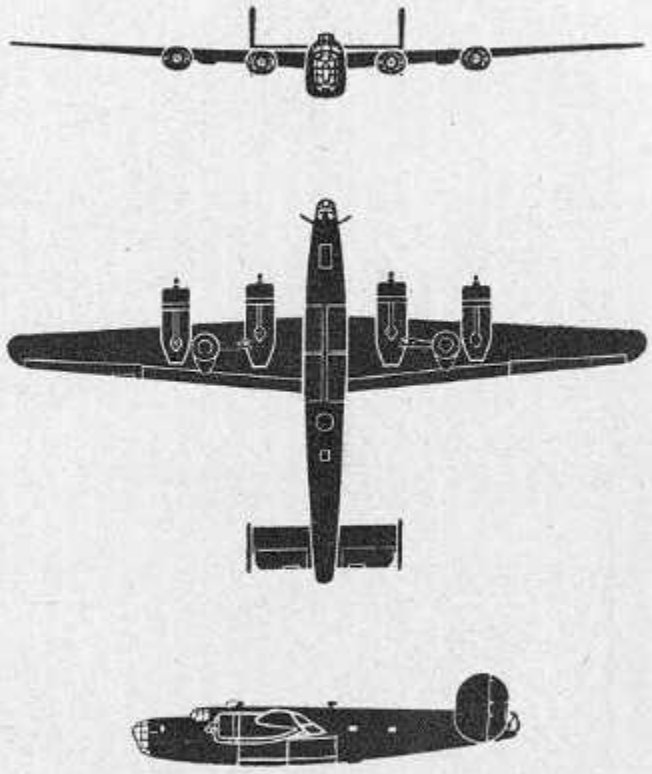
SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: High mid-wing monoplane. Four radial engines. Long narrow equally tapered wings with small rounded tips and slight dihedral. Deep bulky fuselage. Large rounded twin fins and rudders set flush with outer end of stabilizer.

INTEREST: This long-range bomber is used in all theaters by the British and the U. S. Army Air Forces. It has high speed, powerful armaments and is extremely maneuverable for its size. All of these factors reduce the number of fighter craft required for its protection. The B-24's high performance results in part from its clean design and use of the thin "Davis" wing which materially reduces drag. The military transport version, designated as the C-87, has a nontransparent nose, and a cabin under the wing in place of the bomb bay. It was this aircraft which carried Mr. Willkie on his round-the-world mission in the autumn of 1942.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

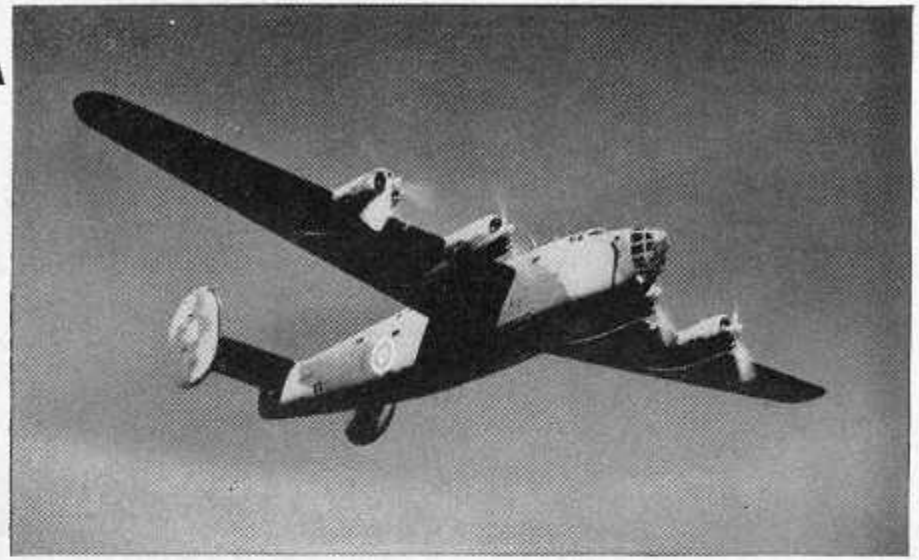
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3



SPAN: 110 ft.
LENGTH: 66 ft.
APPROX. MAX. SPEED: 310 m. p. h.

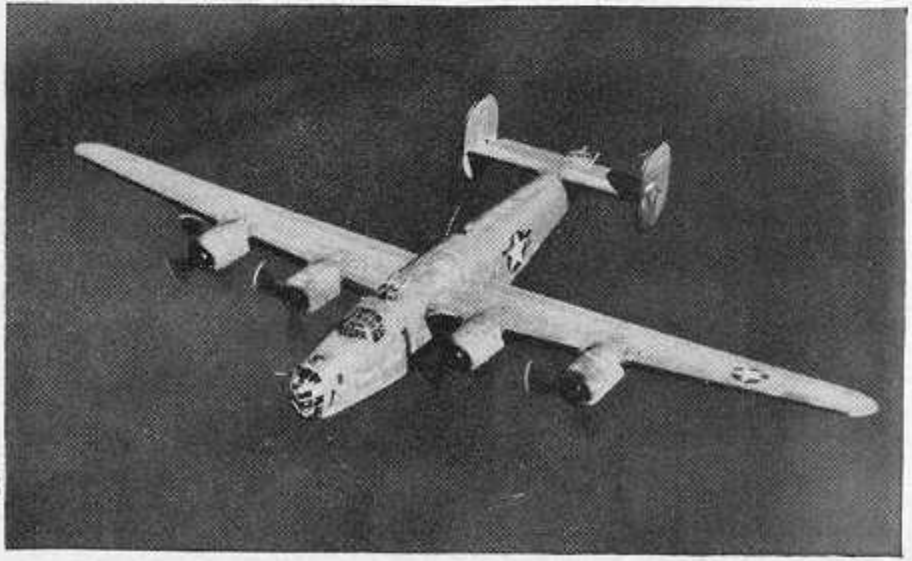
SERVICE CEILING:
over 30,000 ft.

RESTRICTED

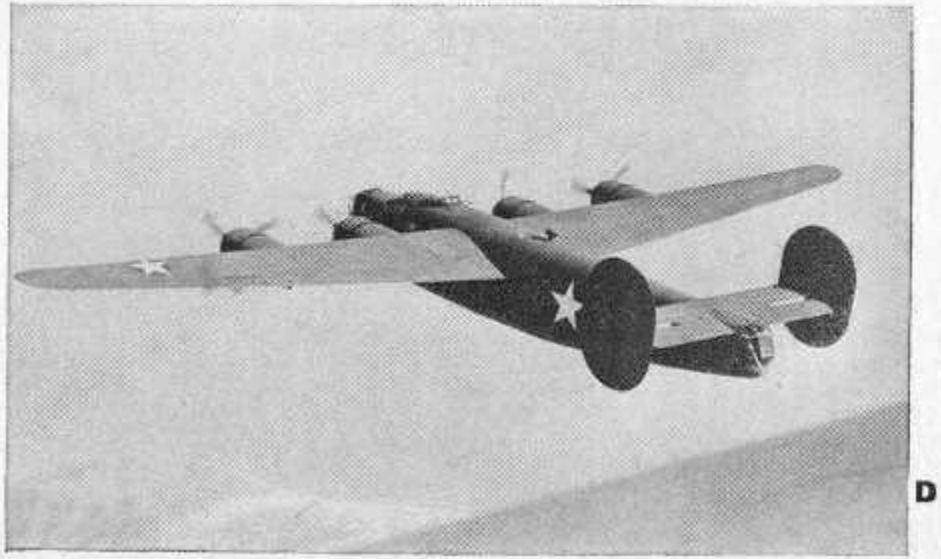


A

C



B

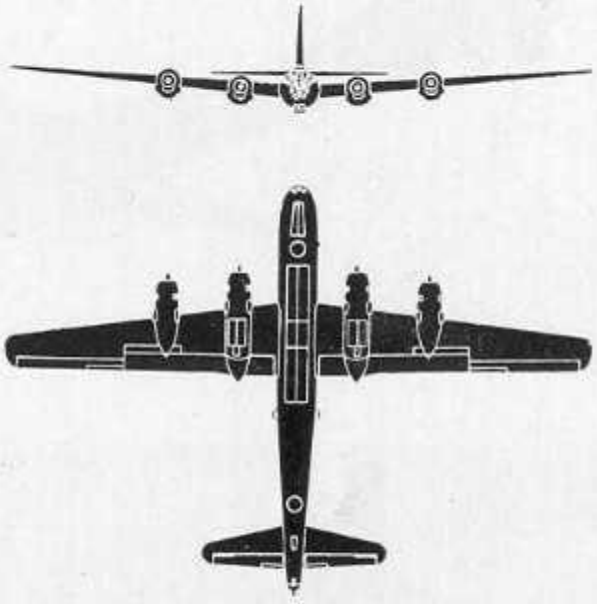


D

HEAVY BOMBER

U. S. A.

B-29 SUPER FORTRESS



ARMY: B-29
BOEING, BELL
U. S. A.

DISTINGUISHING FEATURES: Mid-wing monoplane with four radial engines. Long narrow wing with tapered leading edge, nearly straight trailing edge, and blunt tips. Long, narrow, cylindrical fuselage with long smooth nose. Large fin and rudder faired into fuselage. Tailplane miniature of wing with rounded tips. Inboard engines protrude slightly beyond trailing edge of wing.

INTEREST: A high-altitude heavy bomber, designed to carry large bomb loads over great distances at high speed, the B-29 is especially adapted for the work in the Far East. It is powered by four Wright Cyclone 2200 horsepower engines. Developed from the B-17, it incorporates many innovations resulting from combat operations. It is the largest bomber now in operation. First used operationally on June 5, 1944 against railway shops at Bangkok, Thailand. Later was used to bomb the Japanese mainland at Yawata from China bases on June 15, 1944.

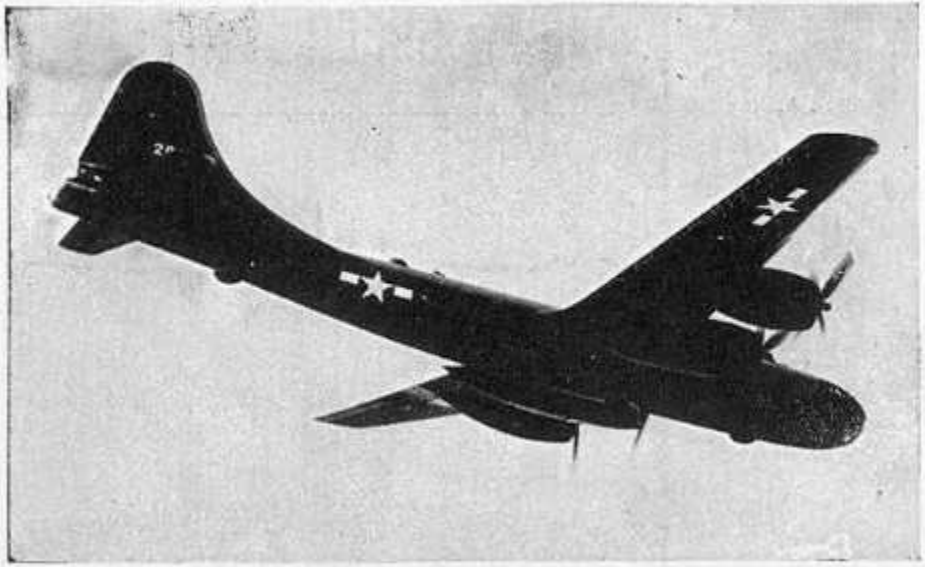
SPAN: 141 ft. 3 in.
LENGTH: 99 ft. 0 in.
APPROX. MAX. SPEED: About 370 m.p.h.
SERVICE CEILING: Over 30,000 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

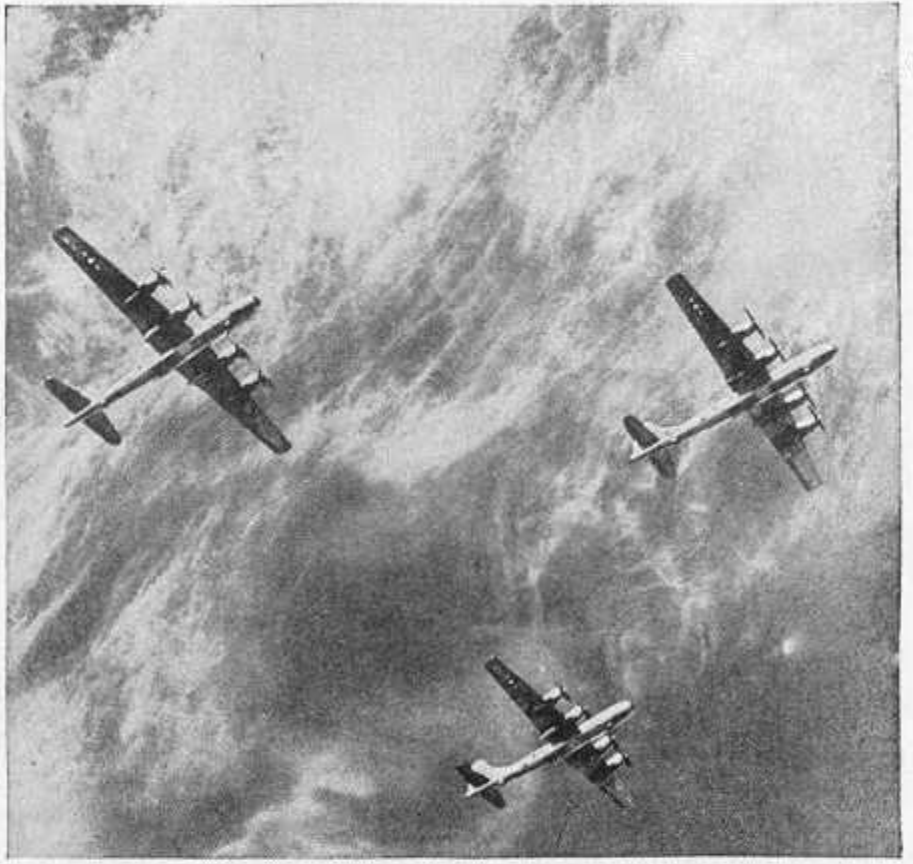
RESTRICTED

A

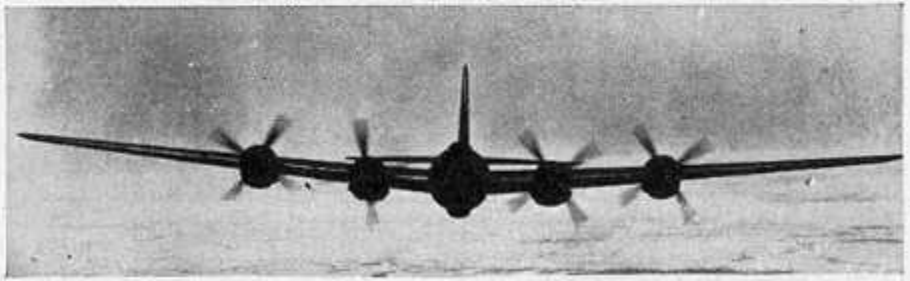


B

C



D

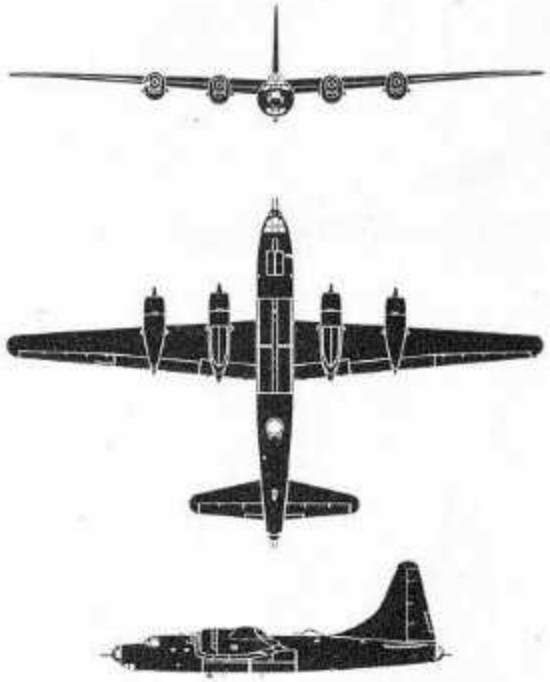


ARMY: B-32
CONSOLIDATED VULTEE
U. S. A.

HEAVY BOMBER

U. S. A.

B-32 DOMINATOR



DISTINGUISHING FEATURES: Four-engine, high-wing monoplane with single fin and rudder. Very long and narrow Davis wing with slight dihedral. Huge, sail-like fin and rudder is very high and fairs forward into the fuselage. All four-engine nacelles are underslung and break trailing edge of wing. Fuselage is of circular section and has a very heavy set appearance.

INTEREST: The B-32 is the second very heavy bomber to go into production for the U. S. AAF. Although slightly smaller, its speed, range, and bomb load are very similar to that of the B-29. In contrast to certain innovations employed in the B-29, the Dominator does not have pressurized cabins or central fire-control system. Ball turrets are employed in the nose and tail.

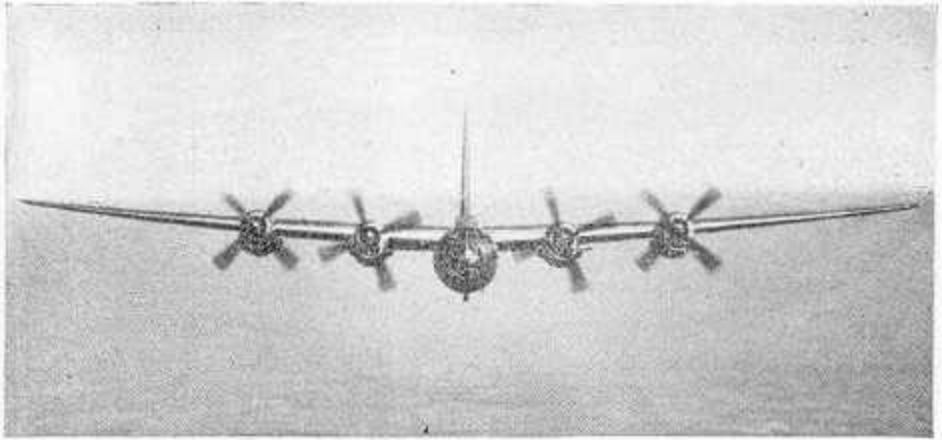
SPAN: 135 ft. **SERVICE CEILING:** 30,700 ft.
LENGTH: 82 ft. 11 in.
APPROX. MAX. SPEED: Over 300 mph.

APRIL 1945
FROM DATA CURRENTLY AVAILABLE

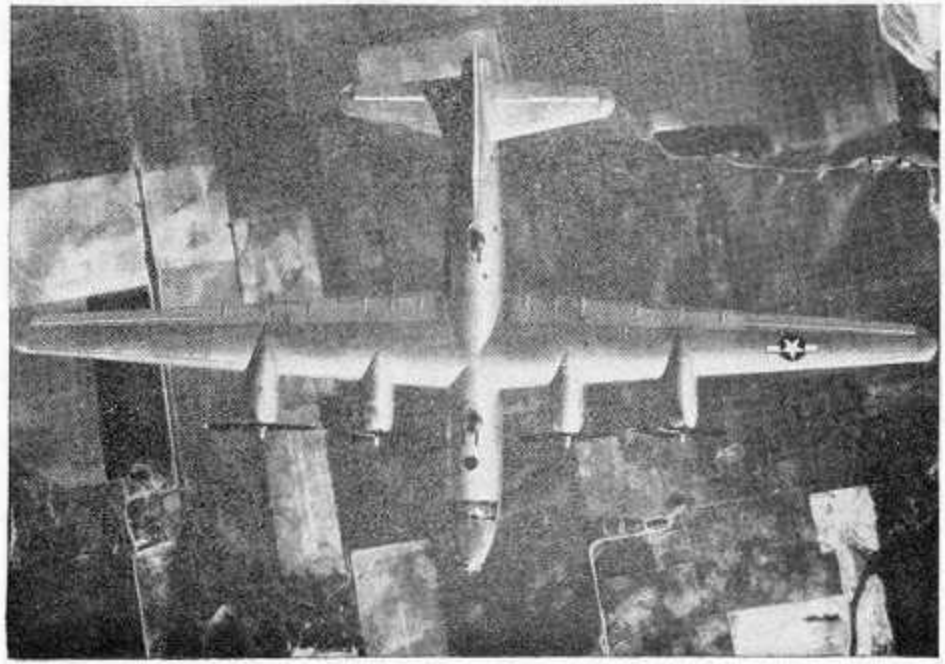
SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A ▲ B ▼



C ▲ D ▼

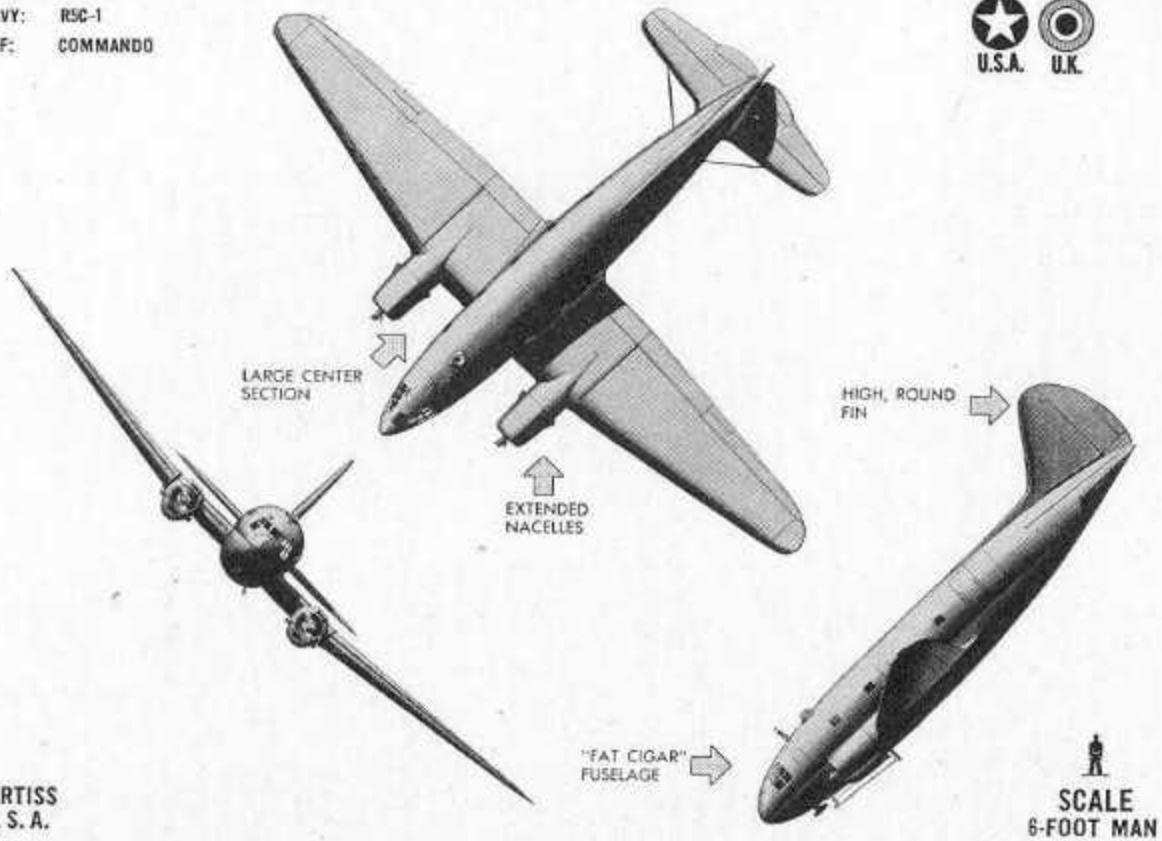


C-46 "COMMANDO"

ARMY: C-46
C-46 A
NAVY: R5C-1
RAF: COMMANDO

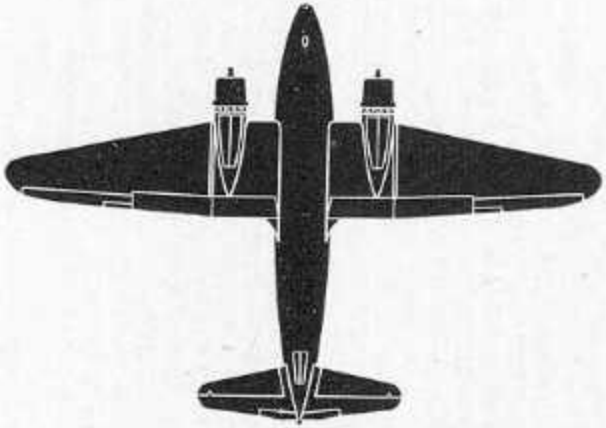
TRANSPORT—GLIDER TUG

U.S.A. U.K.



CURTISS
U. S. A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Low mid-wing monoplane with two radial engines. Wings tapered on outer panels with most of the taper on leading edges. Engines slightly underslung, projecting well forward of wing. Fuselage is cylindrical in shape with pointed nose unbroken by step for cockpit enclosure. Rounded single fin and rudder sweeping into fuselage.

INTEREST: The largest twin-engined military cargo plane in the world, the Commando is sometimes called the "Flying Whale" or the "Troopship of the Sky." Originally designed as a 36-passenger commercial airliner, it now may carry such materials as trucks, light field artillery or "Jeeps." Adapted for troop carrying in 1941, it may transport a large number of fully-equipped troops. The Commando's engines are larger and more powerful than those in use on commercial airlines, and in size this aircraft dwarfs those in commercial use.

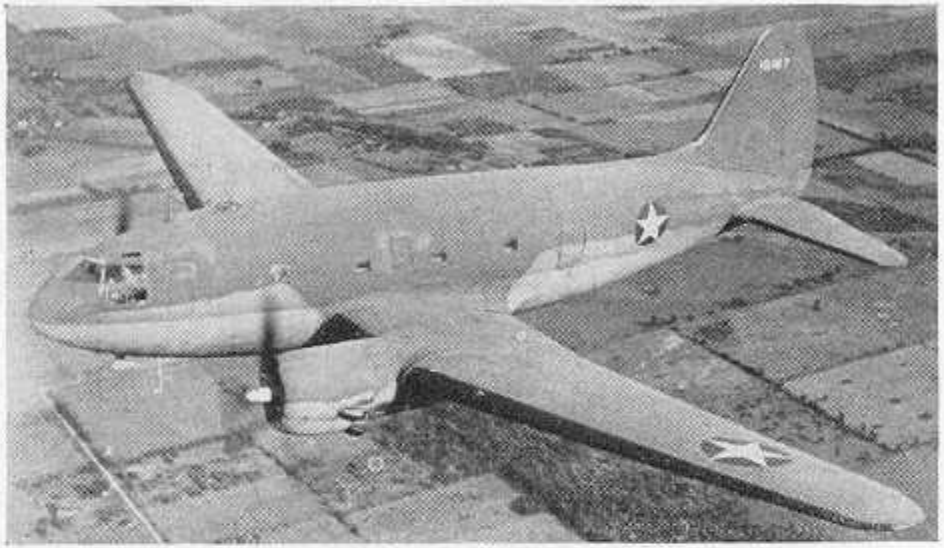
SPAN: 108 ft.
LENGTH: 76 ft. 4 in.
APPROX. MAX. SPEED: over 260 m. p. h.
SERVICE CEILING: above 27,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

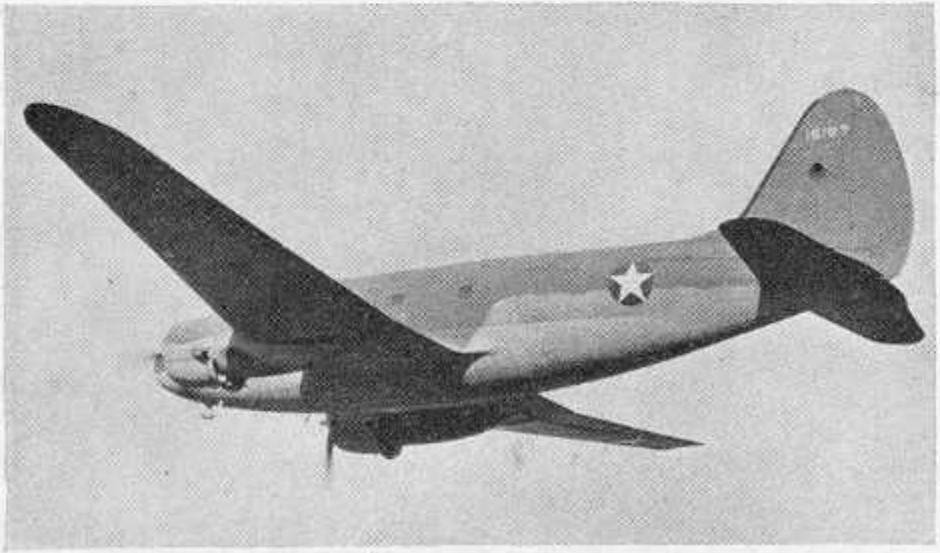
RESTRICTED

A

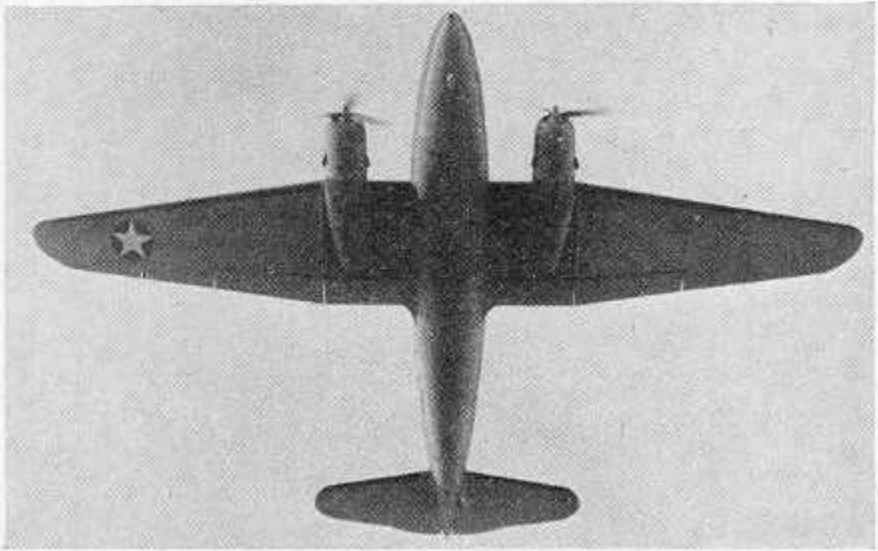


C

B



D

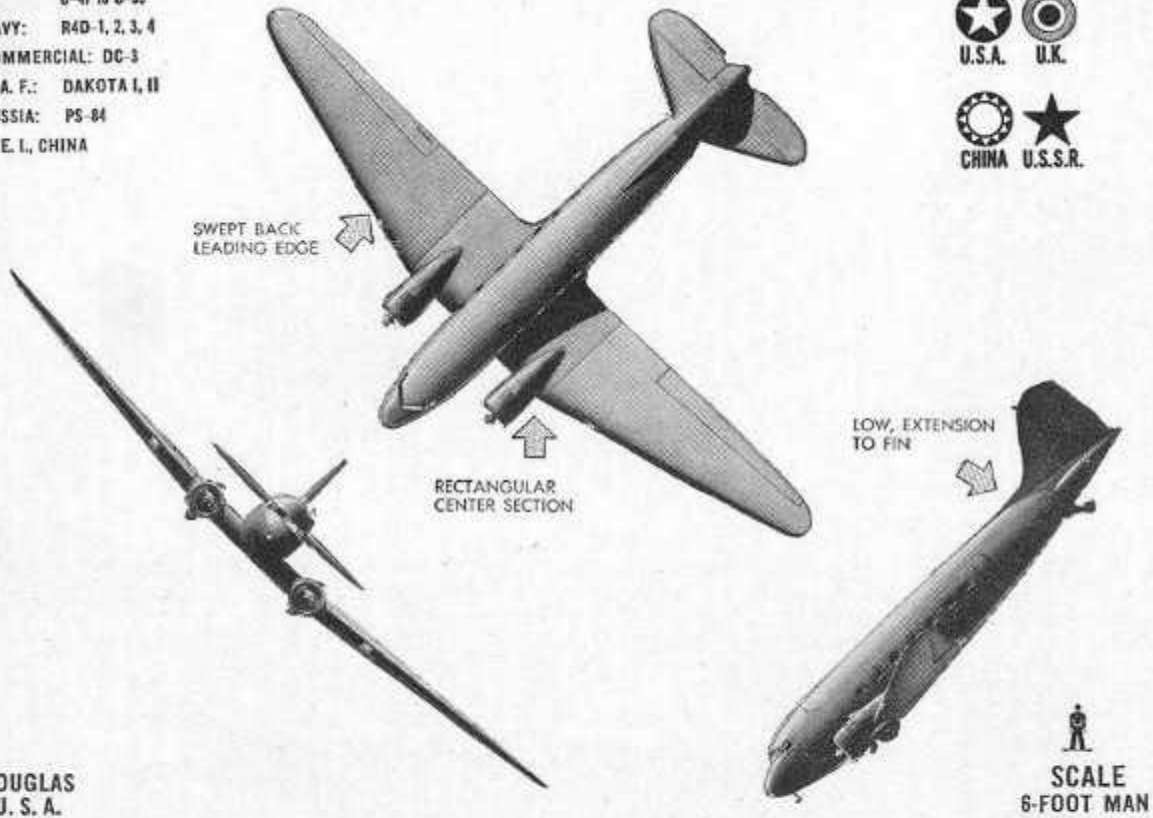


ARMY: C-47
C-47 to C-53
NAVY: R4D-1, 2, 3, 4
COMMERCIAL: DC-3
R. A. F.: DAKOTA I, II
RUSSIA: PS-84
N. E. I., CHINA

TRANSPORT—GLIDER TUG

U.S.A. U.K.

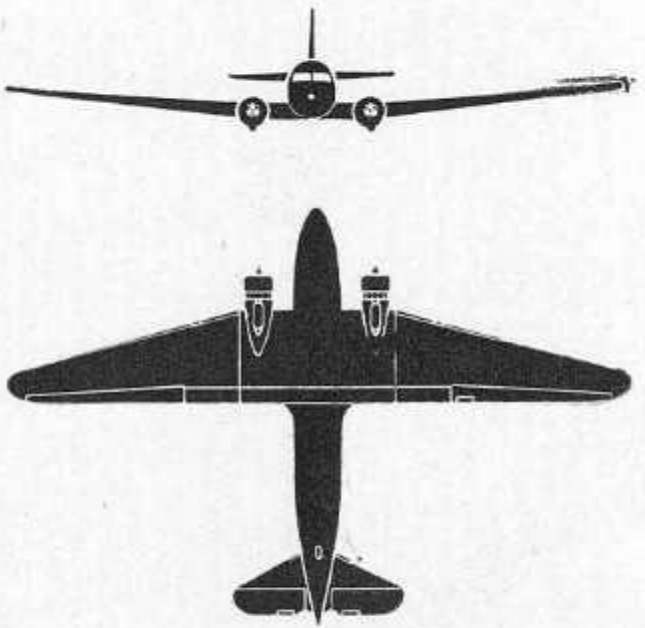
CHINA U.S.S.R.



SCALE
6-FOOT MAN

DOUGLAS
U. S. A.

C-47 "SKYTRAIN"
C-53 "SKYTROOPER"



DISTINGUISHING FEATURES: Twin-engine low-wing monoplane. Center section of wing has no dihedral. Outer section of leading edge has sharp taper. Trailing edge is straight and tips are sharply rounded. The tail fin is faired forward for about one-third the length of the fuselage. The tail plane is sharply tapered at the leading edge.

INTEREST: This troop and cargo transport is the military transport version of the DC-3, one of the best-known and most widely used American commercial aircraft. The C-47 is built under license in Russia and designated the PS-84. It is used as a standard transport of the Russian Air Force. This aircraft is designated as either the C-47 or the C-53, depending on the internal arrangement and use of cargo and jumping hatches. The name "Skytrain" comes from use of this transport as a troop carrier and as a glider tug. In England it is known as the Dakota.

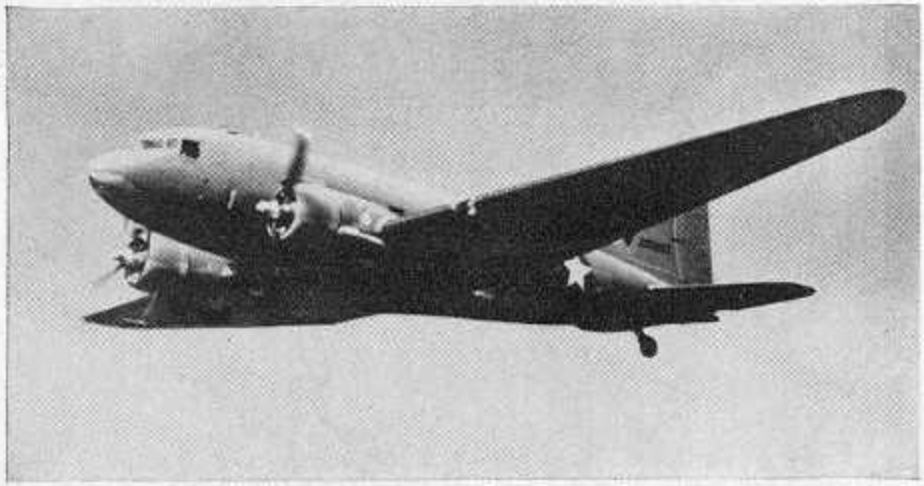
SPAN: 95 ft.
LENGTH: 64 ft. 6 in.
APPROX. MAX. SPEED: 220 m. p. h.

SERVICE CEILING:
24,000 ft.

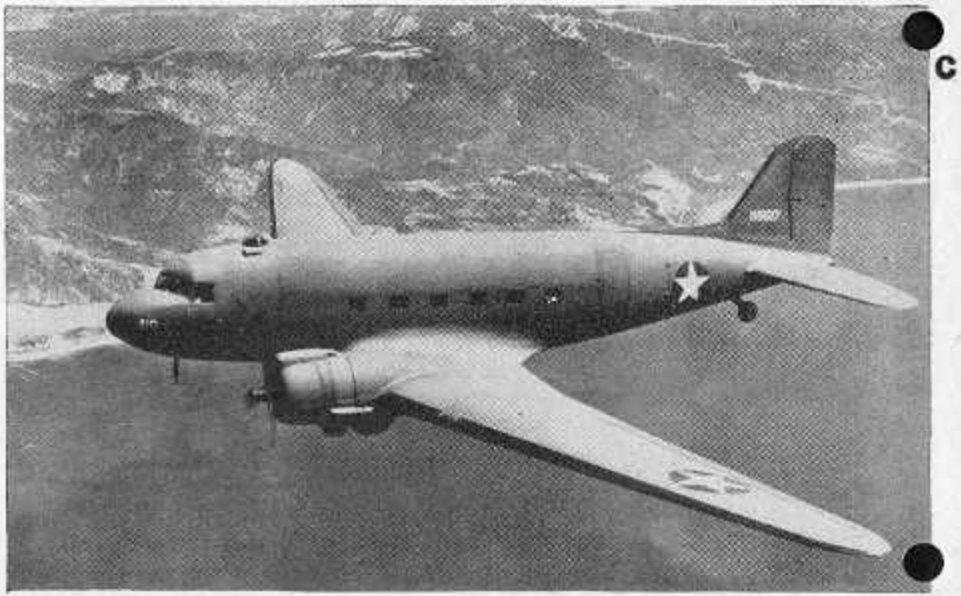
RESTRICTED

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

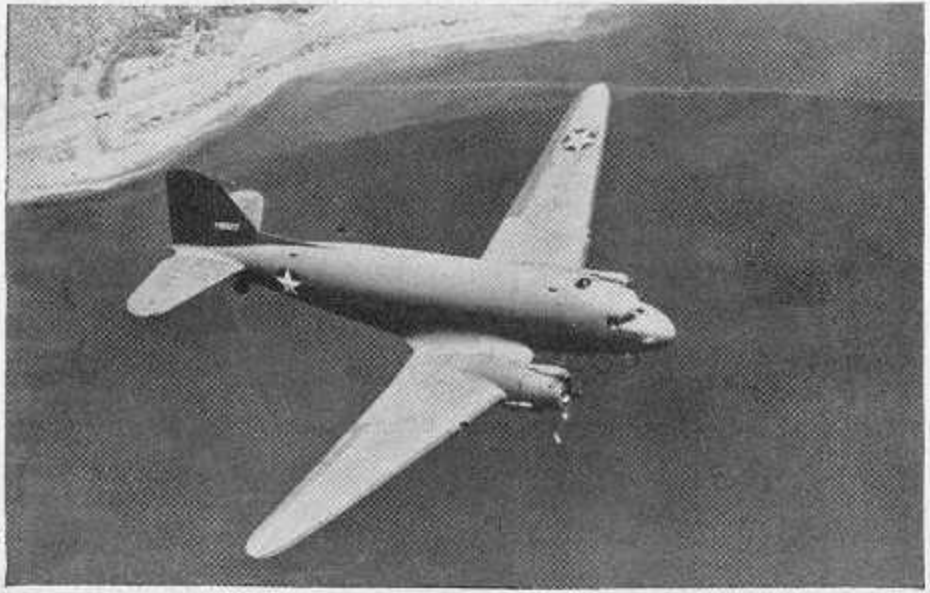
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3



A



C



B

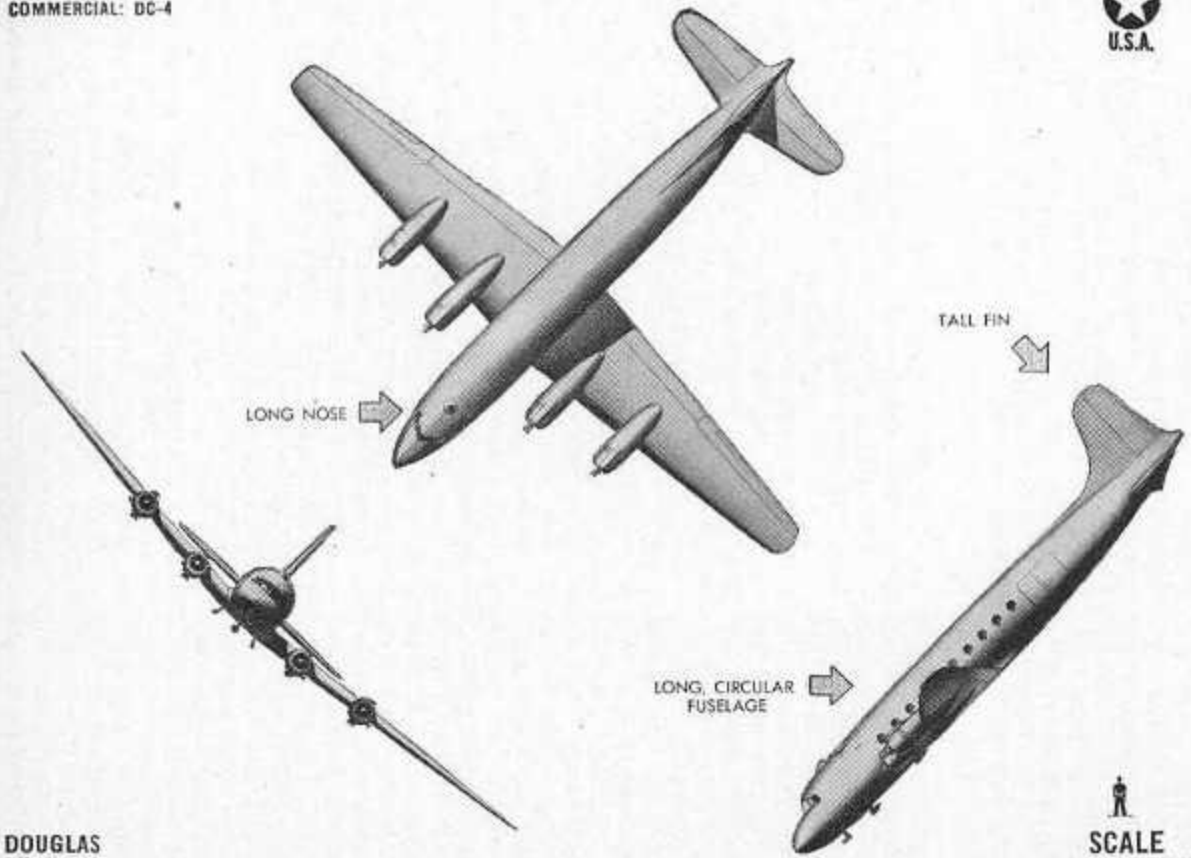
D

ARMY: C-54
C-54, A
NAVY: R5D-1
COMMERCIAL: DC-4

TRANSPORT

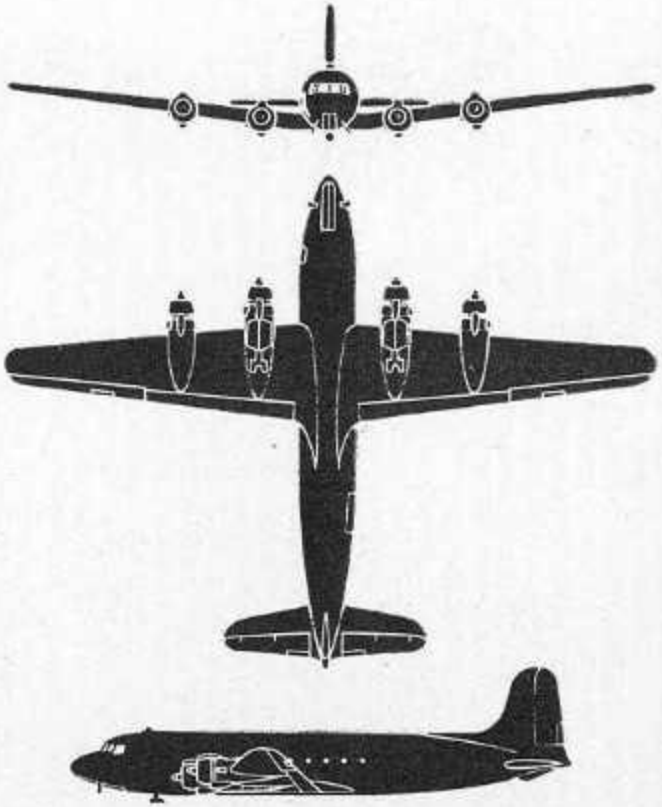
U.S.A.

C-54 "SKYMASTER"



DOUGLAS
U. S. A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Four-engined low-wing monoplane. Narrow, equally tapered wings with small rounded tips. Thick fuselage with long massive nose. Tall fin and rudder faired into fuselage.
INTEREST: This troop and cargo carrier is the largest operational military transport aircraft in the United States today. Its commercial designation was DC-4, the prototype of which was sold to Japan. The current military version differs in many ways, however, from the plane which the Japanese purchased. As a troop transport, the Skymaster can carry more than 40 fully equipped soldiers.

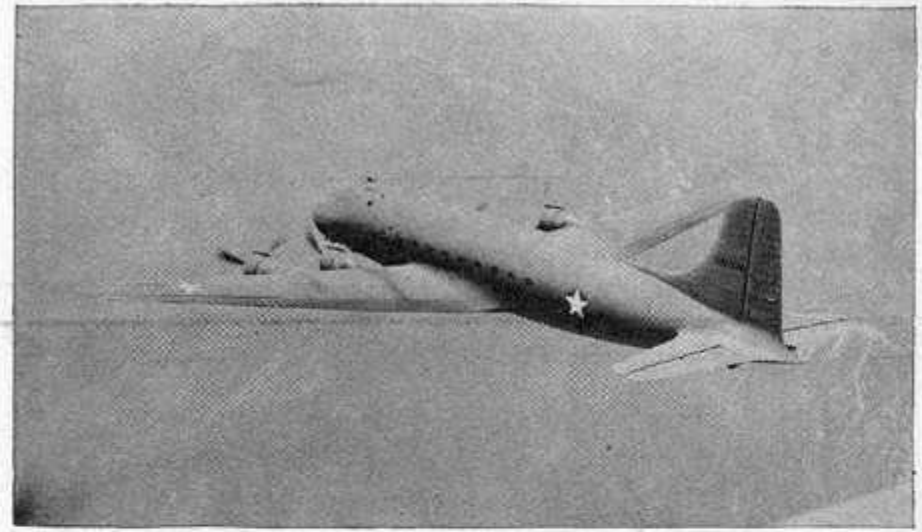
SPAN: 117 ft. 6 in.
LENGTH: 93 ft. 10 in.
APPROX. MAX. SPEED: over 280 m. p. h.
SERVICE CEILING: over 22,200 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A



C

B

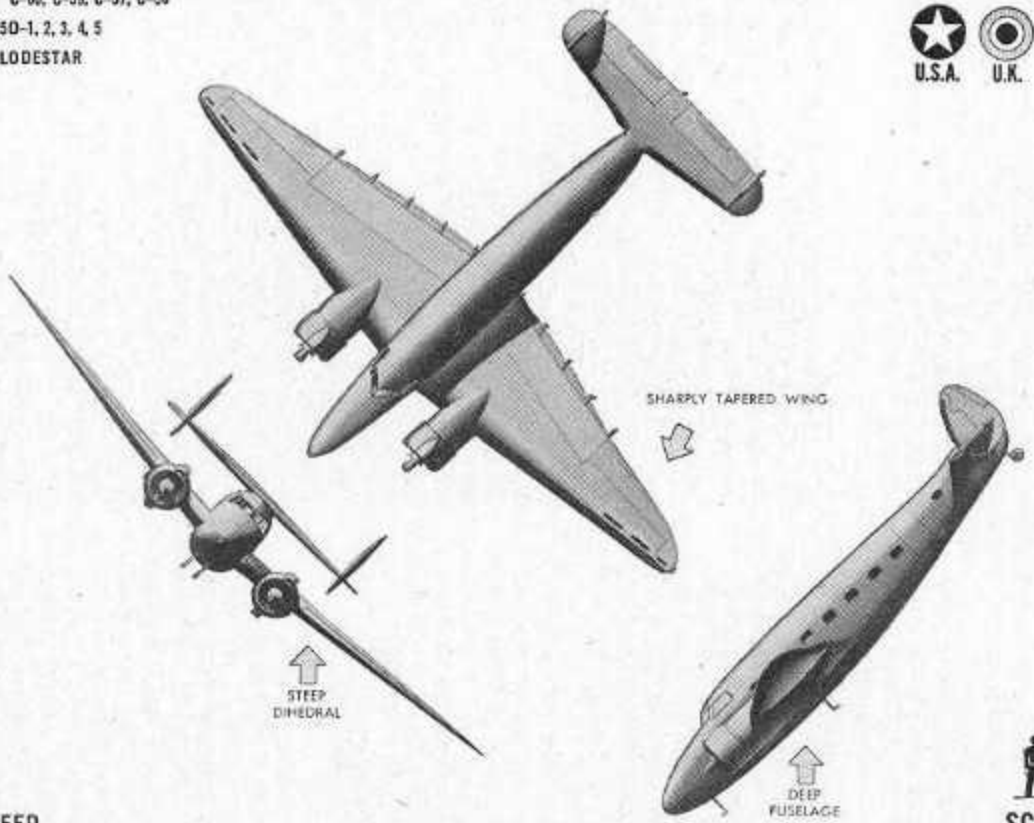
D

C-60 "LODESTAR"

ARMY: C-60
C-60, C-59, C-57, C-56
NAVY: R5D-1, 2, 3, 4, 5
R. A. F.: LODESTAR
CHINA

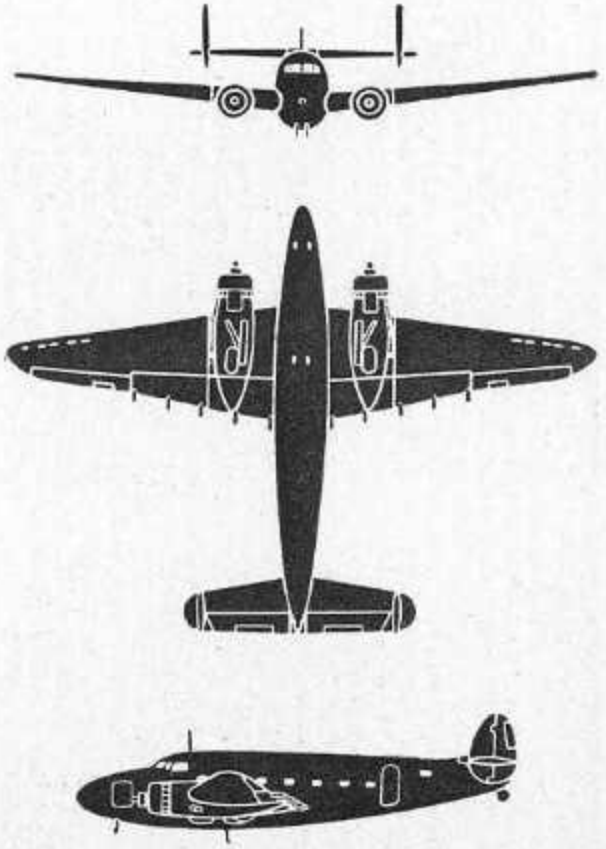
TRANSPORT

U.S.A. U.K. CHINA



LOCKHEED
U. S. A.

SCALE
6-FOOT MAN



SPAN: 65 ft. 8 in.
LENGTH: 49 ft. 10 in.
APPROX. MAX. SPEED: 265 m. p. h.

SERVICE CEILING:
30,000 ft.

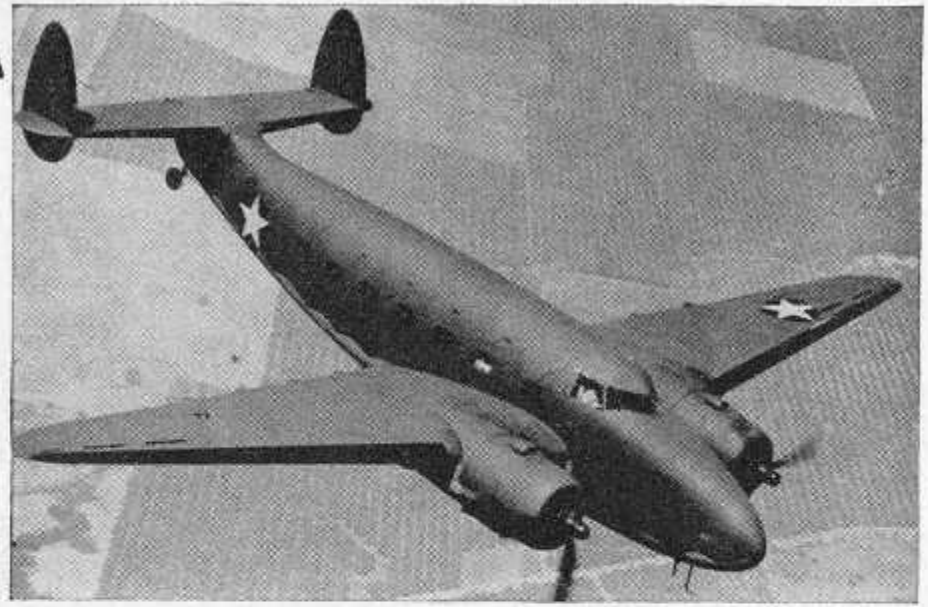
DISTINGUISHING FEATURES: Two engined low mid-wing monoplane with full dihedral. Wings have pronounced taper to sharply rounded tips. Fowler flap guides prominent at trailing edge. Deep fuselage with sharply rounded nose. Egg shaped twin fins and rudders are set inboard.

INTEREST: This aircraft is the military version of the world's fastest commercial transport. It was first converted to military use in order to convey parachute troops for the Netherlands East Indies government. Alternate designations of the Lodestar are C-56, C-57, C-59, depending on the interior equipment. The Hudson (A-29) was developed from the commercial version of this aircraft.

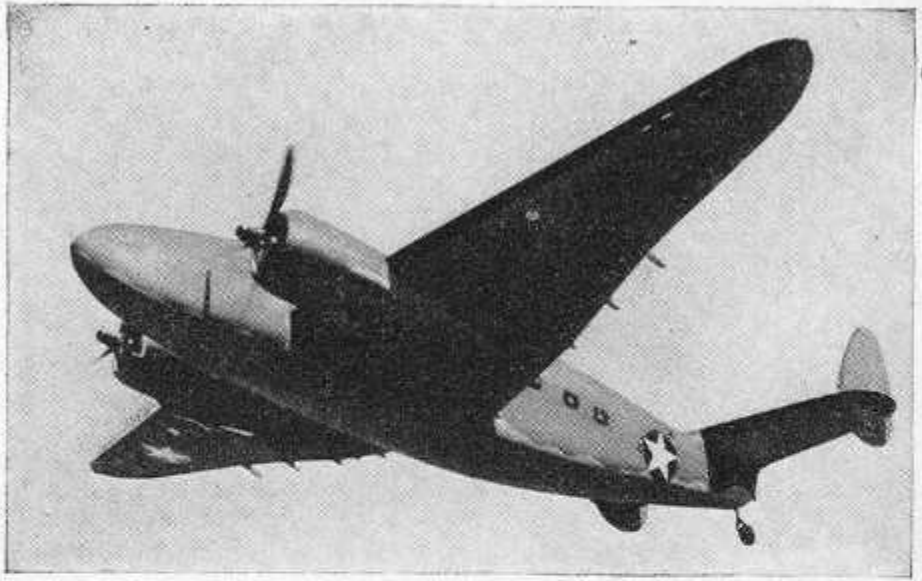
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

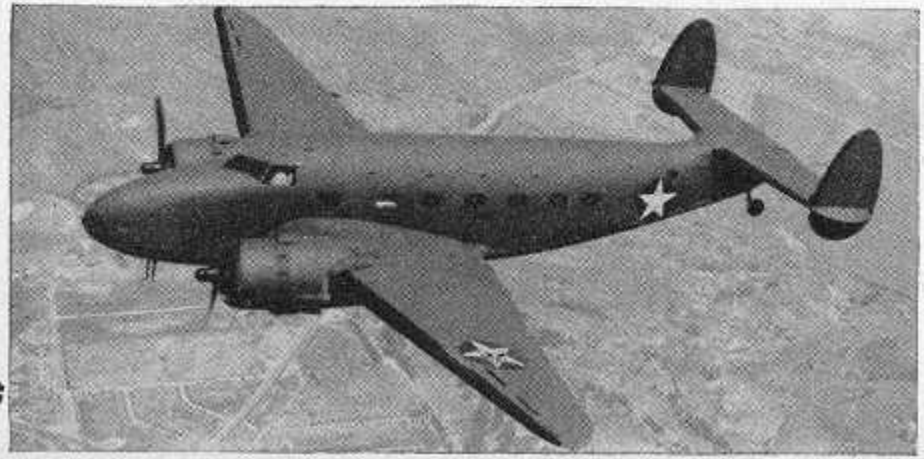
RESTRICTED



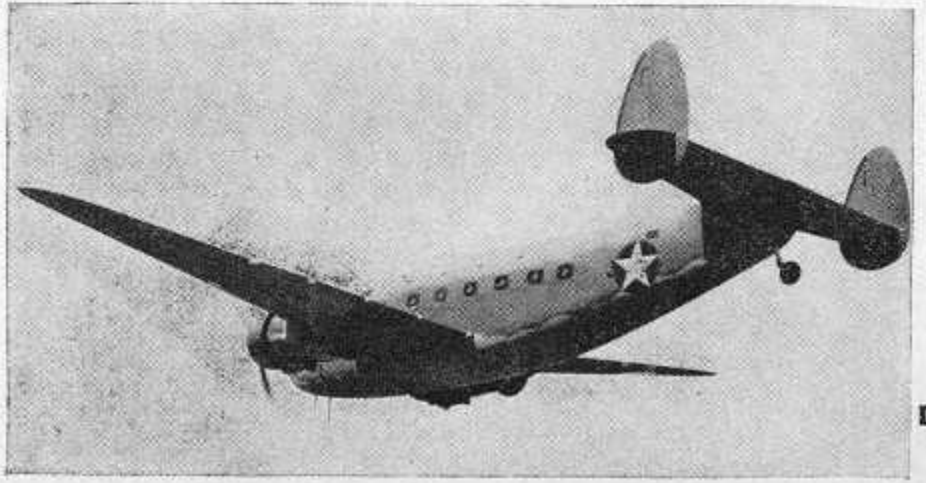
A



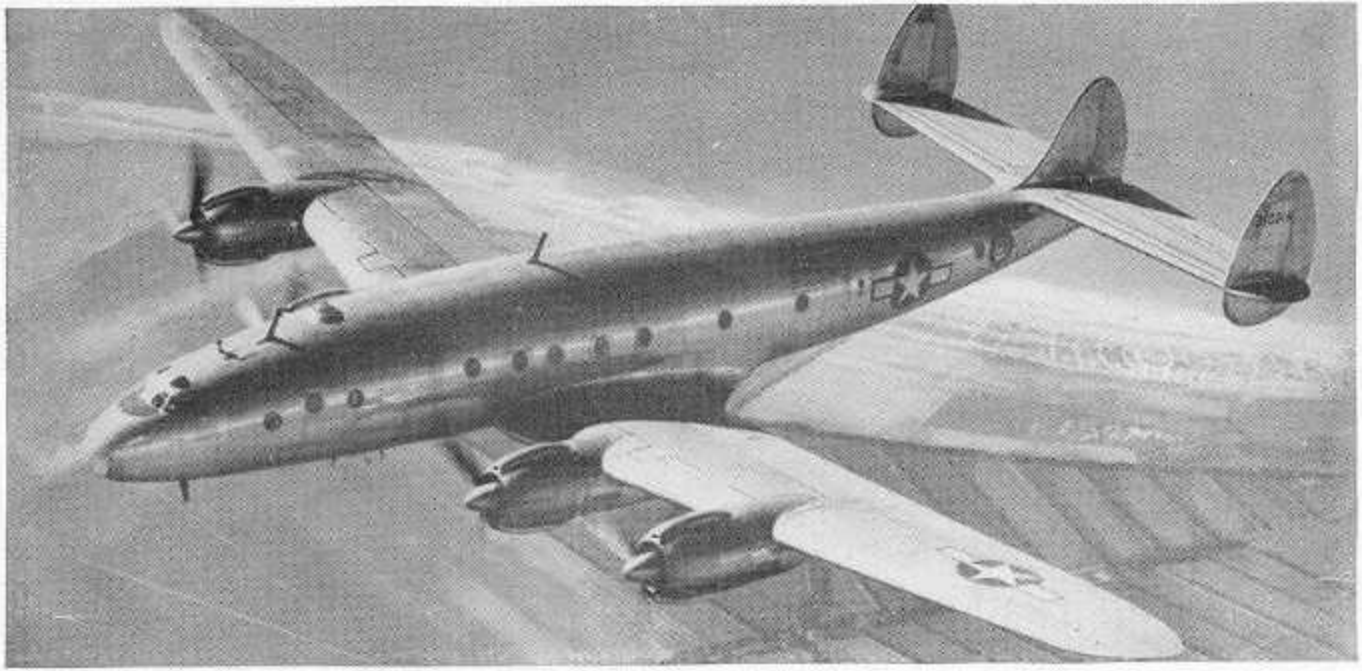
C



B



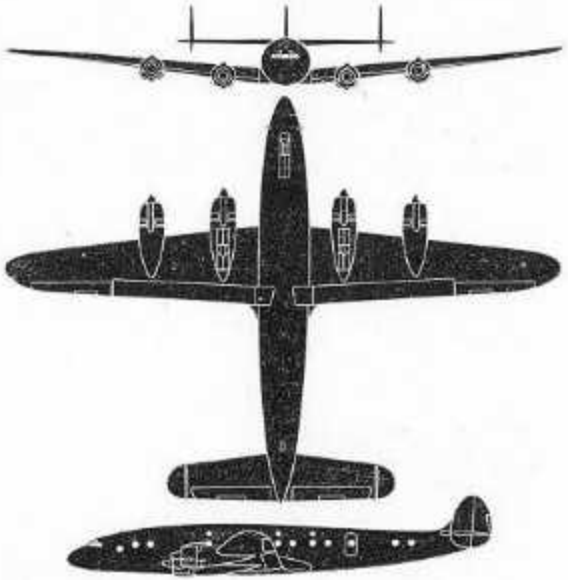
D



C-69 CONSTELLATION

U.S. TRANSPORT

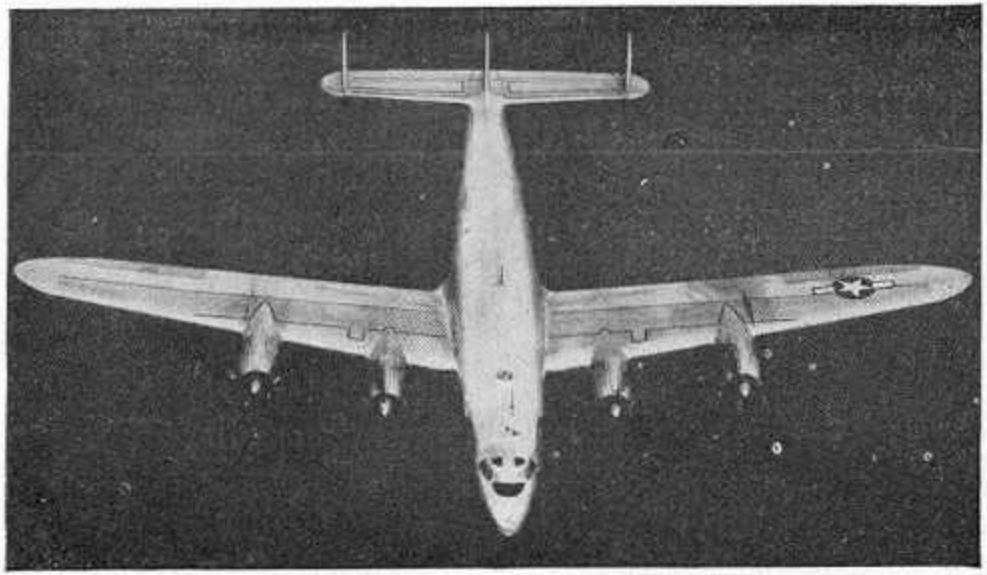
LOCKHEED

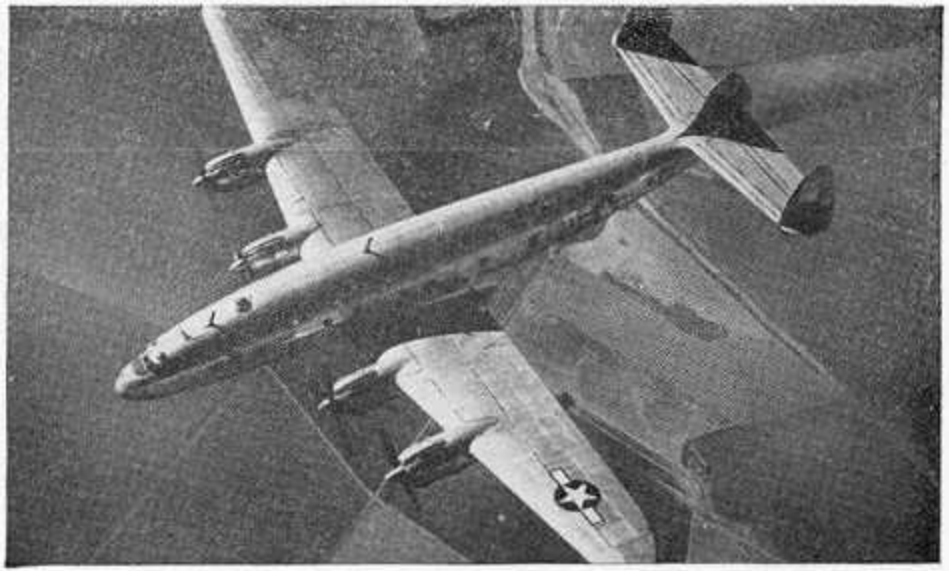


INFORMATION Outstanding recognition feature of the Constellation is its triple tail, which is matched by no other large aircraft than the Boeing Clipper. General contour is conventional, although the fuselage presents a dolphin-like aspect from the side. Double trucked landing wheels are not apparent in flight. Constellations are to be seen both in military and civil markings, both on transcontinental and transatlantic runs. They are the first four motored transports to be delivered to the airlines straight from the factories.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
123′	95′–2″	93,000	330/10,000	1,800/SL	25,000	2,400

APRIL 1946 RESTRICTED

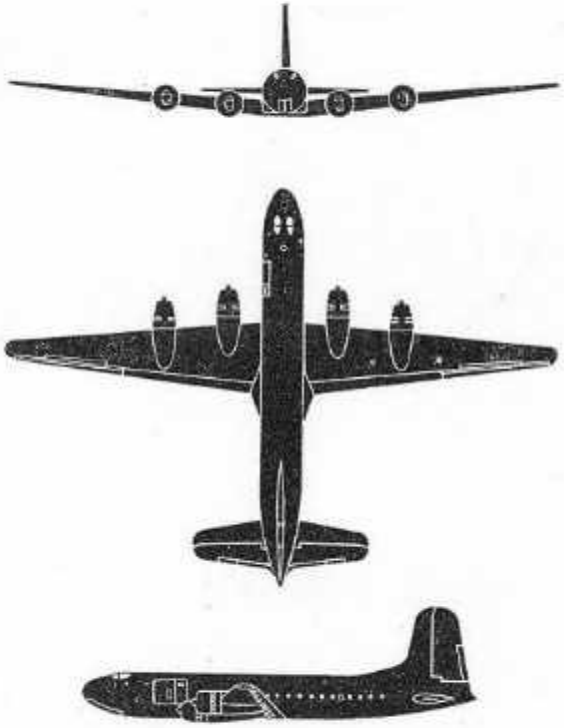




C-74 GLOBEMASTER

U.S. TRANSPORT

DOUGLAS



INFORMATION In general outline, the C–74 "Globemaster" resembles an enlarged "Skymaster", Army C–54, Navy R5D. Vertical tail surfaces are larger in proportion but similar in conformation. The Globemaster is currently the largest landplane in service, although it will be overshadowed by the XB–36 and XC–99. Passenger accommodation is for 125 fully equipped troops or 109 litter patients. Loading of cargo is accomplished through double door on left side of nose. Pilot and co-pilot each have a separate bubble canopy giving bug like appearance to the C–74's nose.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
173'–3"	124'–2"	145,000	300/16,400	1,050/SL	22,000	2,700

APRIL 1946 RESTRICTED

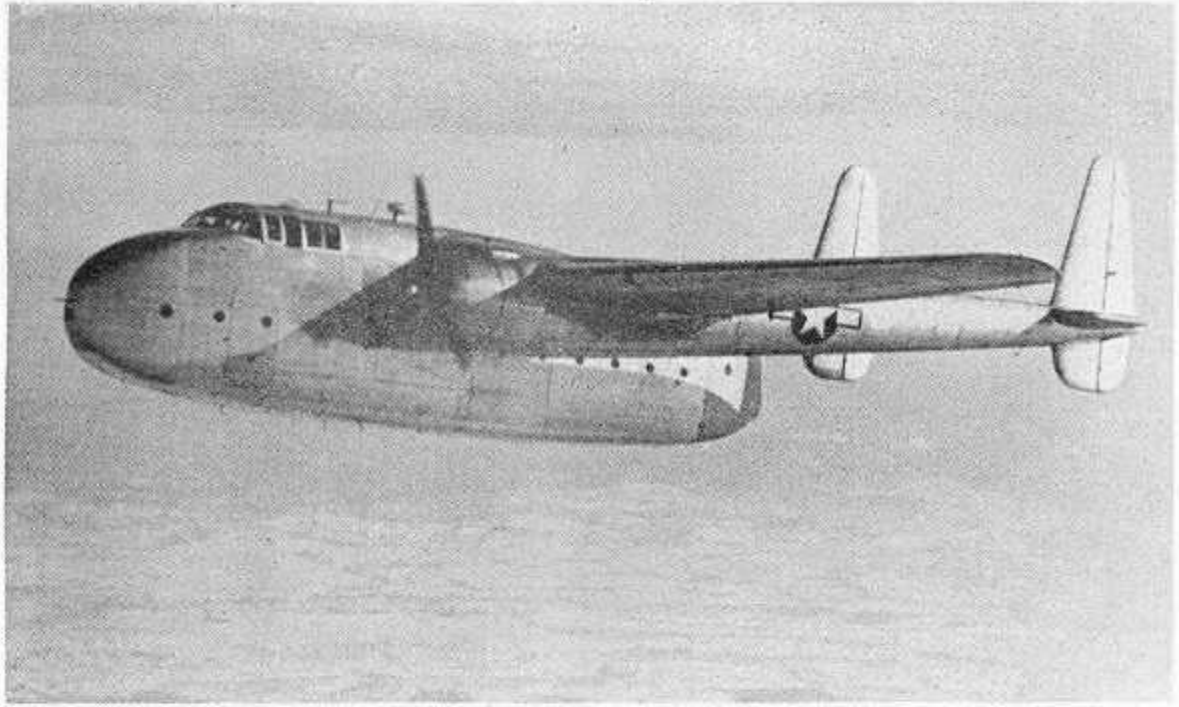

265402

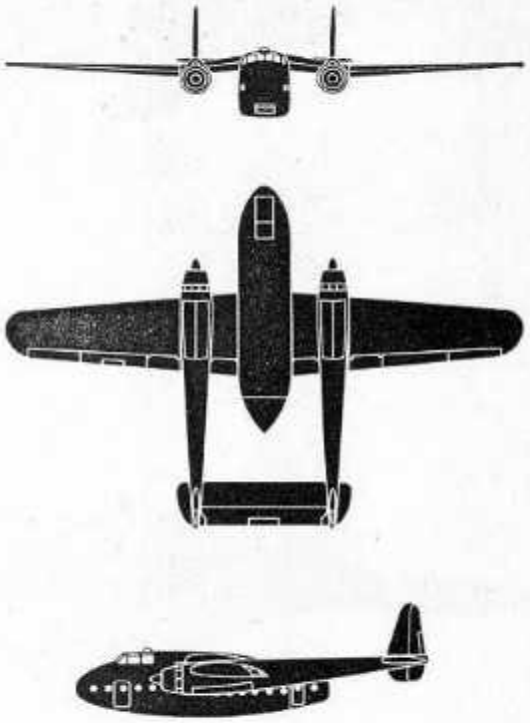
ARMY: C-82
FAIRCHILD
U. S. A.

TRANSPORT

U. S. A.

C-82 PACKET





DISTINGUISHING FEATURES: Twin-engine, high-wing monoplane with twin booms and twin fins and rudders. Large, bulky central fuselage extends well forward beyond engines and projects aft behind wing. Inverted gull wing has equal taper to rounded tips. Fuselage and engines are underslung beneath wing. Booms extend aft from engines to tail assembly. Fins and rudders are tall and narrow and project beneath booms.

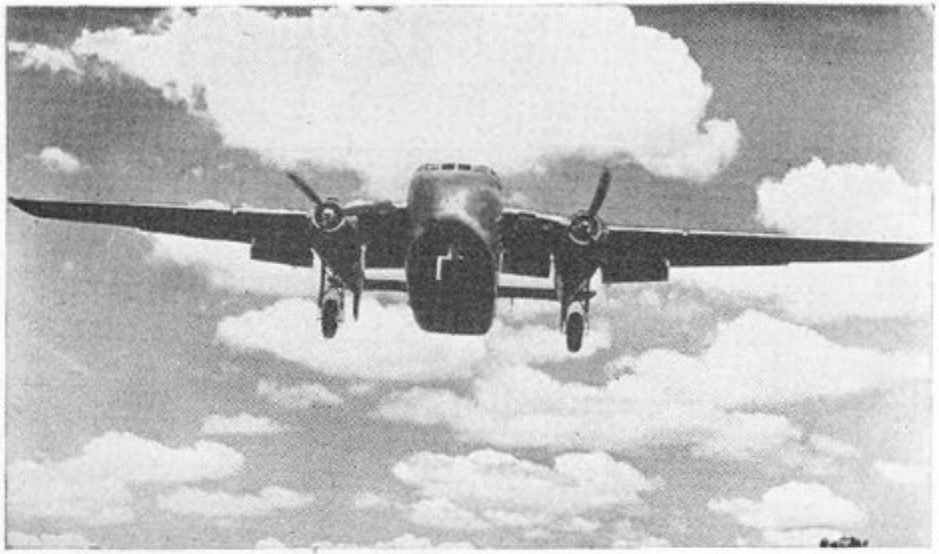
INTEREST: The C-82 is the first U. S. Army aircraft designed exclusively to carry military cargo. It is a heavy, long-range transport with a range of 3,500 miles. Standing on its tricycle landing gear, the after section of the fuselage is at truck platform height and opens to the complete width and height of the interior. Built to operate from small, rough fields, the Packet will bring new mobility to airborne troop and matériel movement in combat areas.

SPAN: 106 ft. 5 in. **SERVICE CEILING:** 22,000 ft.
LENGTH: 75 ft. 10 in.
APPROX. MAX. SPEED: 213 mph. at 13,000 ft.

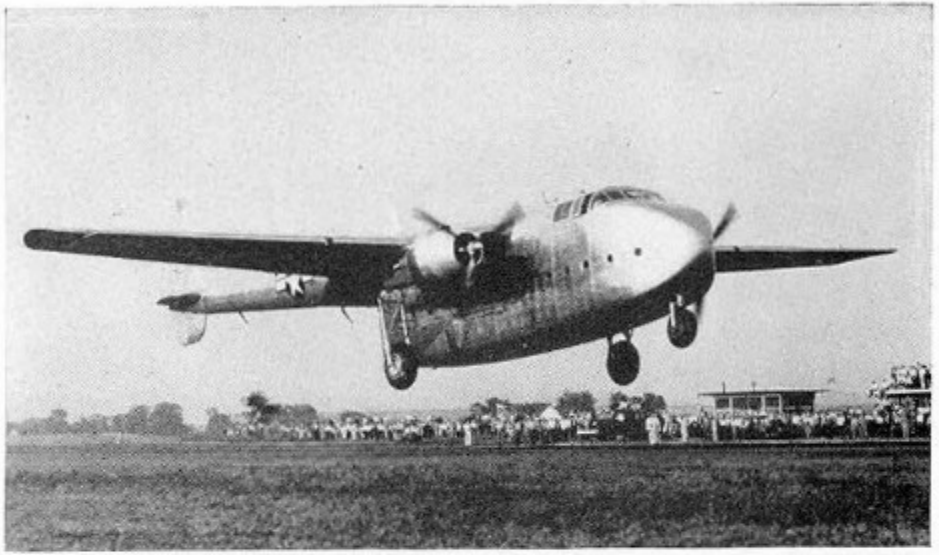
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

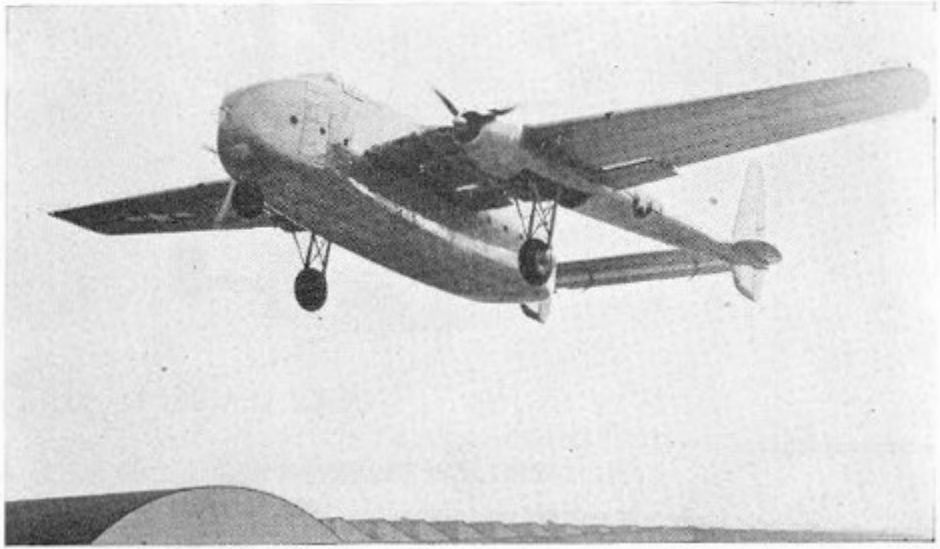
RESTRICTED



A ▲



B ▼



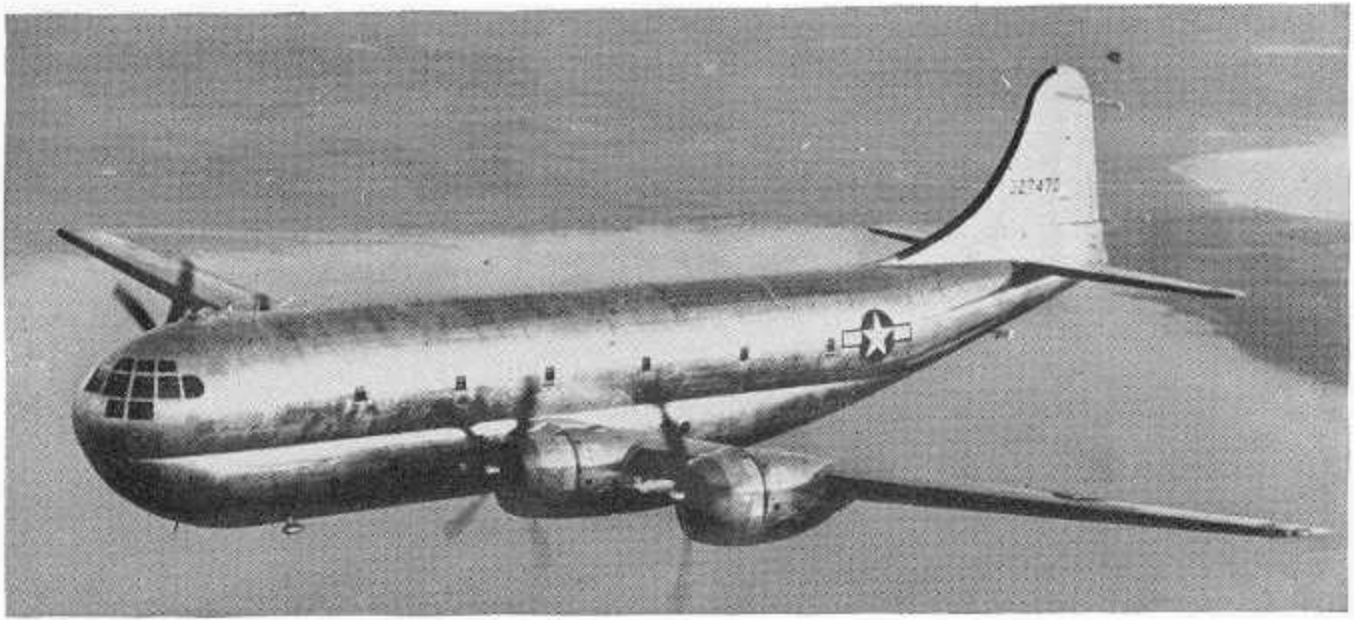
C ▲

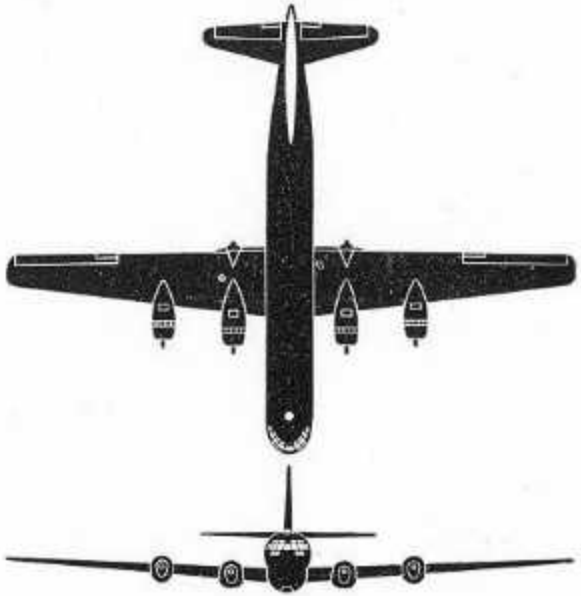
D ▼

C-97 STRATOCRUISER

U.S. TRANSPORT

BOEING

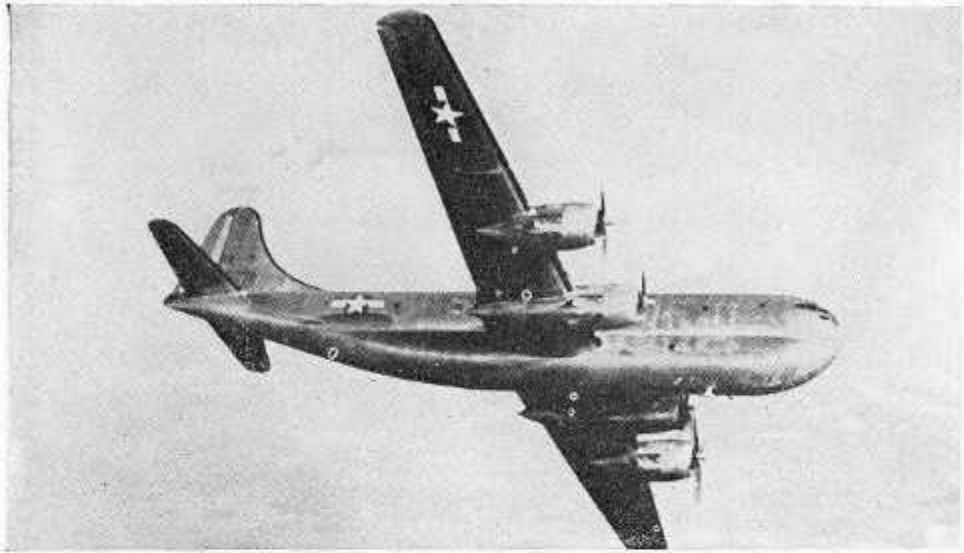


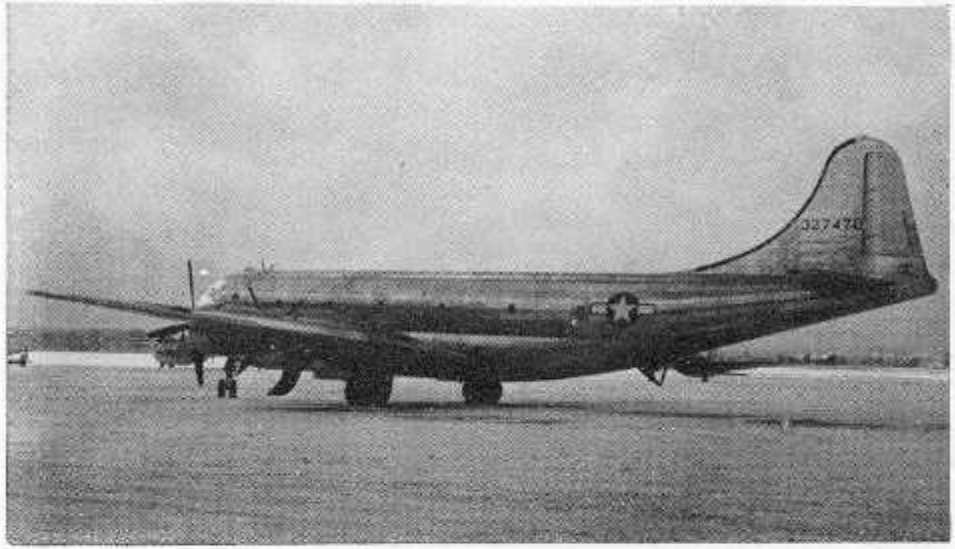


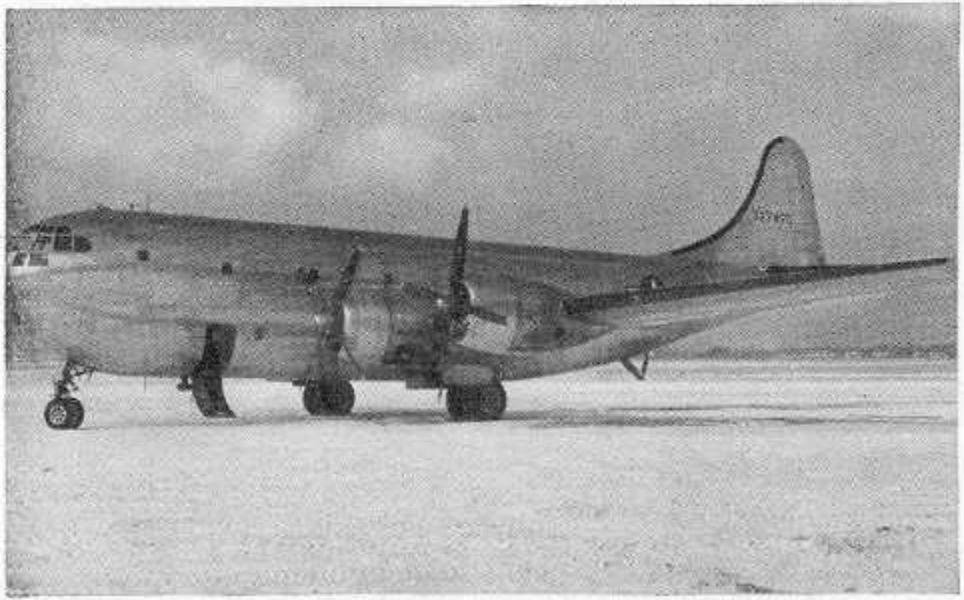
INFORMATION Cargo version of the B-29, the Stratocruiser C-97 utilizes a completely redesigned fuselage with the B-29 wing and tail. Cargo and passengers are accommodated on two separate decks of the double circle, or figure 8 fuselage, 134 troops or 83 litter patients can be accommodated. Unusual feature of the C-97 design is the self contained loading ramp which permits trucks and other vehicles to drive right into the cargo compartment through hatchway under the tail. Straight top line of fuselage and sharp upsweep of bottom line plus bulk of fuselage provide infallible recognition features.

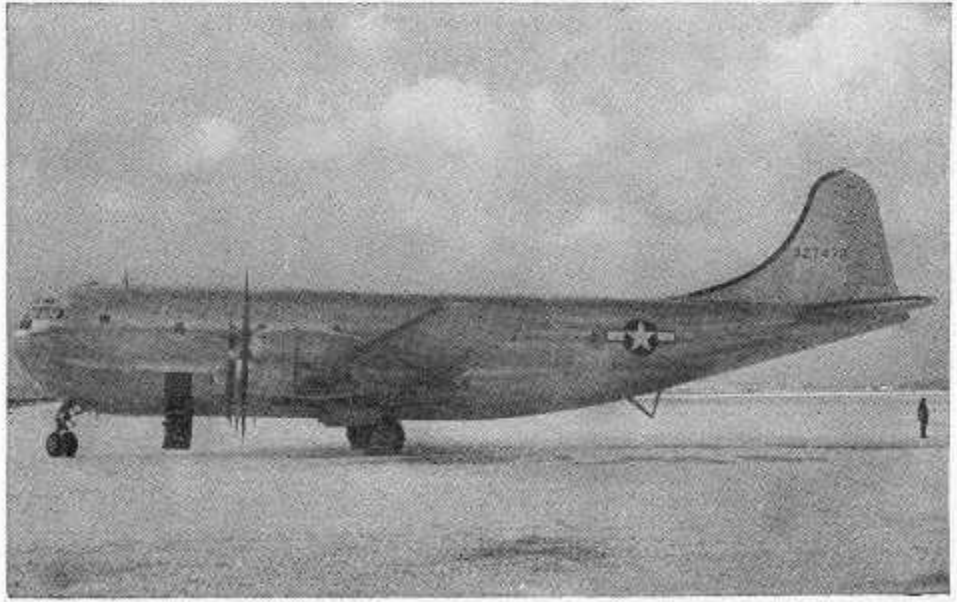
DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
141'-3"	110'-4"	120,000	332/2,500	835	30,500	2,850

APRIL 1946 RESTRICTED









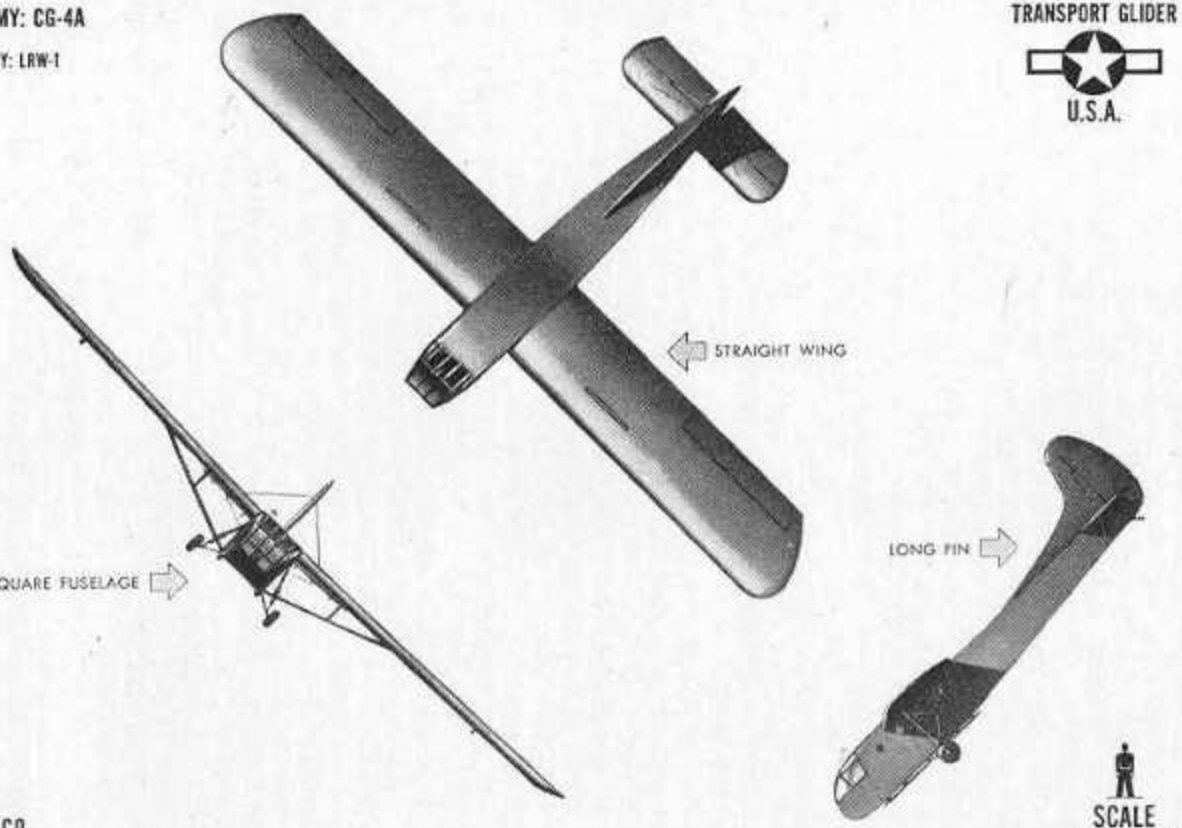
ARMY: CG-4A

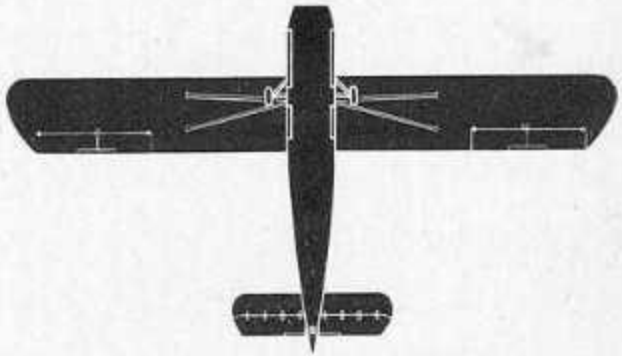
NAVY: LRW-1

TRANSPORT GLIDER

U.S.A.

CG-4A





WACO
U.S.A.

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Long straight wing with raked tips and V struts. Wide, blunt, half-glazed nose. Rectangular-shaped fuselage tapers aft of wing. High fin and rudder with large fairing sweeping forward into fuselage. Rectangular tailplane with raked tips.

INTEREST: Extensive use is made of non-priority materials in the construction of this 15-place glider. It is a Waco design and is being made by several manufacturers. The CG–4A has excellent handling characteristics and was the first glider to be towed across the Atlantic. The C–47 "Skytrain" is often used as its tug.

SPAN: 83 ft. 8 in.

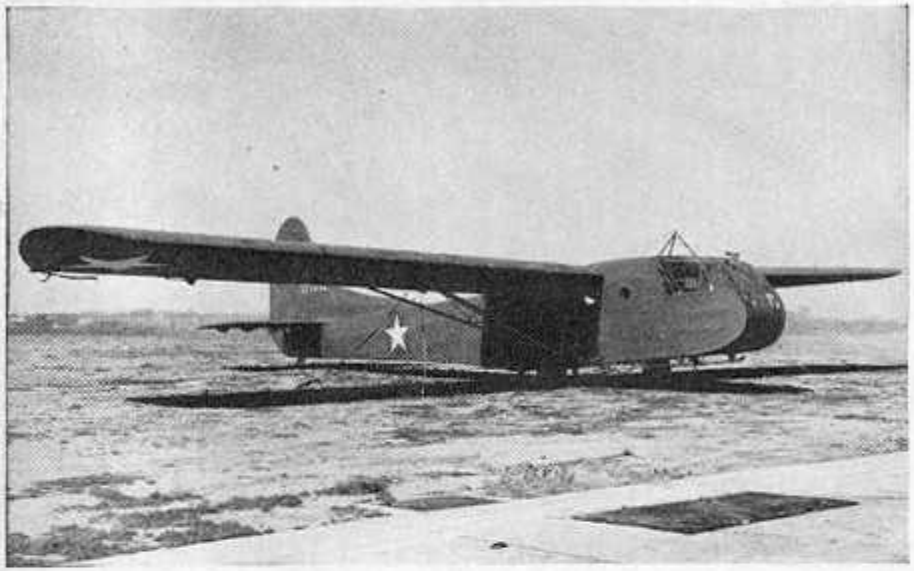
LENGTH: 48 ft. 3 in.

SERVICE CEILING:

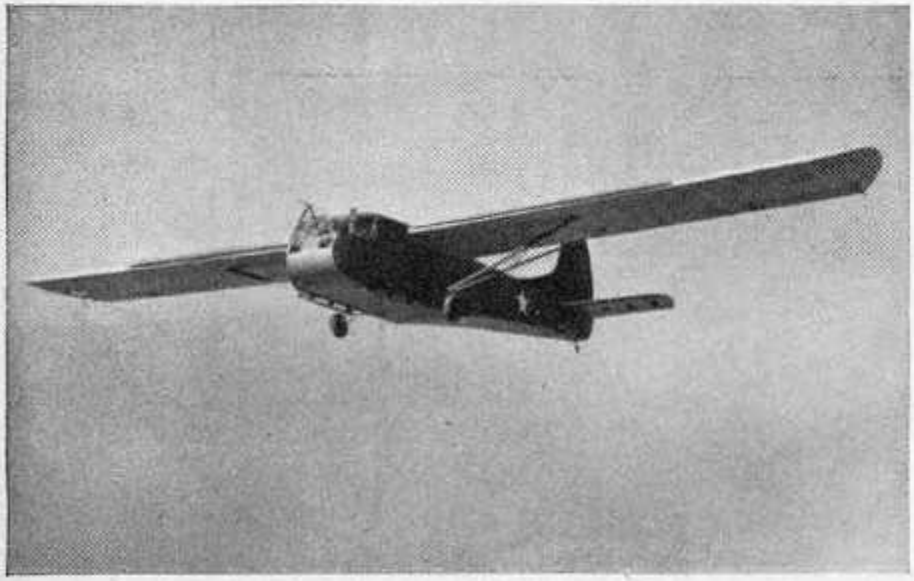
NORMAL TOWING SPEED: 150 m. p. h.

RESTRICTED

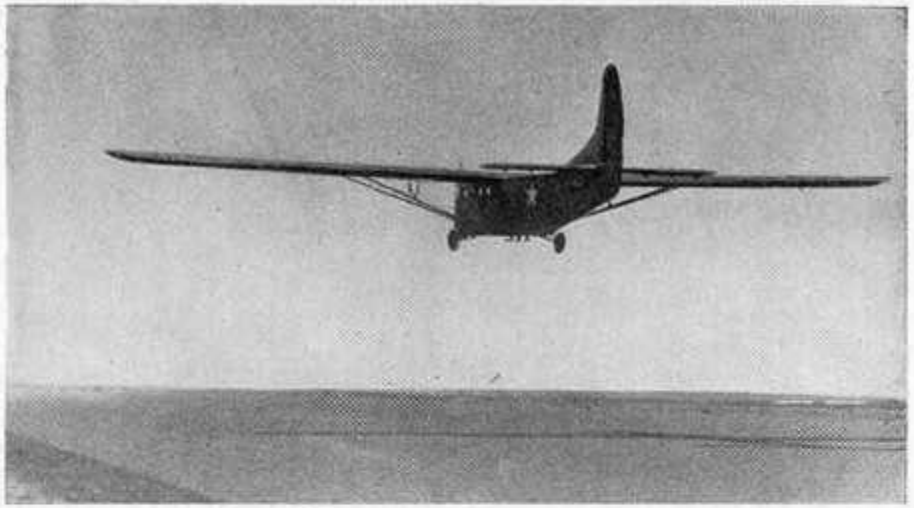
A



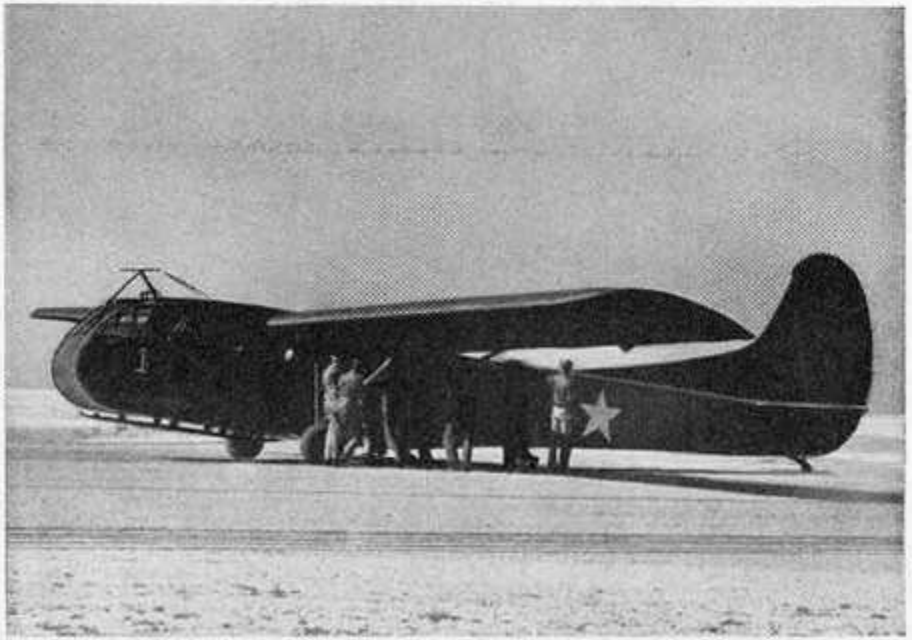
B



C



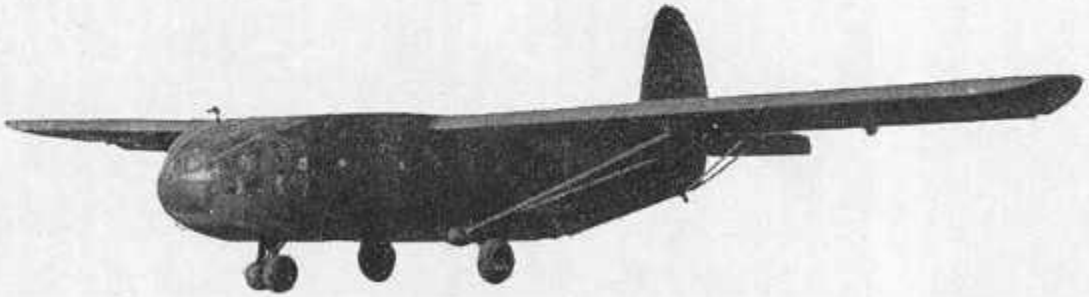
D



CARGO GLIDER

U. S. A.

CG-13A



ARMY: CG-13A
WACO, FORD, NORTHWESTERN
U. S. A.

DISTINGUISHING FEATURES: High-wing monoplane. Straight, narrow wing with blunt, rounded tips. Slight dihedral. Deep, wide fuselage with long, smooth nose. Large fin and rudder. Tailplane miniature of wing. Fixed tricycle undercarriage.

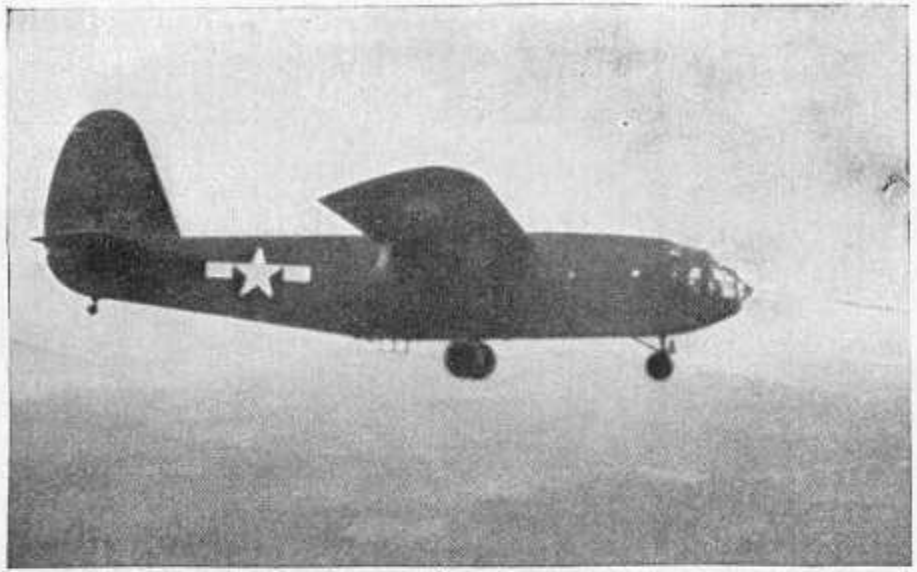
INTEREST: The largest cargo glider in production for the Army Air Forces. While its wing span is only slightly larger than that of the CG-4A, it can carry almost two and one-half times as much useful load. Its greater wing loading gives it better handling characteristics in the air than the CG-4A. Its useful load is 5 tons and it can carry the 1½ ton, 6 x 6 truck or the standard 105 mm howitzer.

SPAN: 85 ft. 8 in.
LENGTH: 54 ft. 4 in.
TOW SPEED: 180 m.p.h.
SERVICE CEILING:

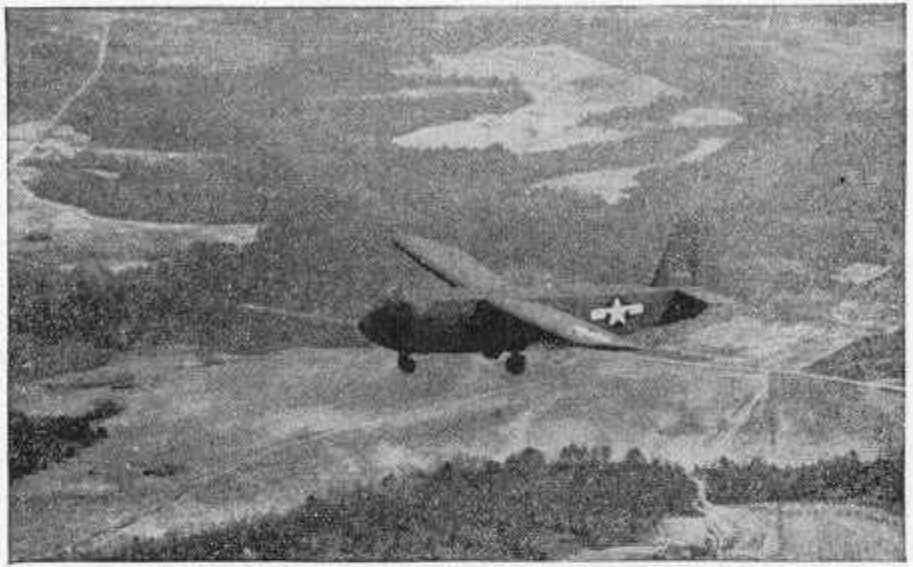
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

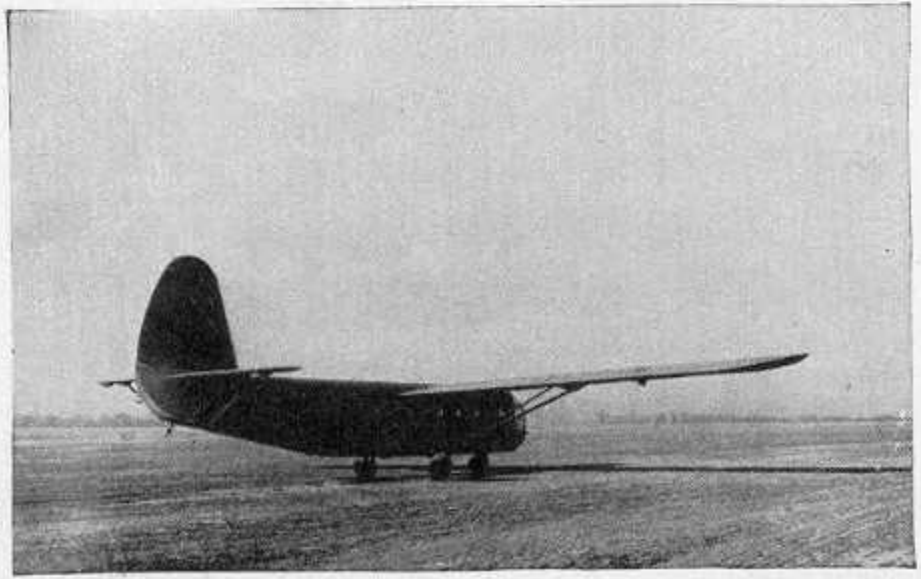
RESTRICTED



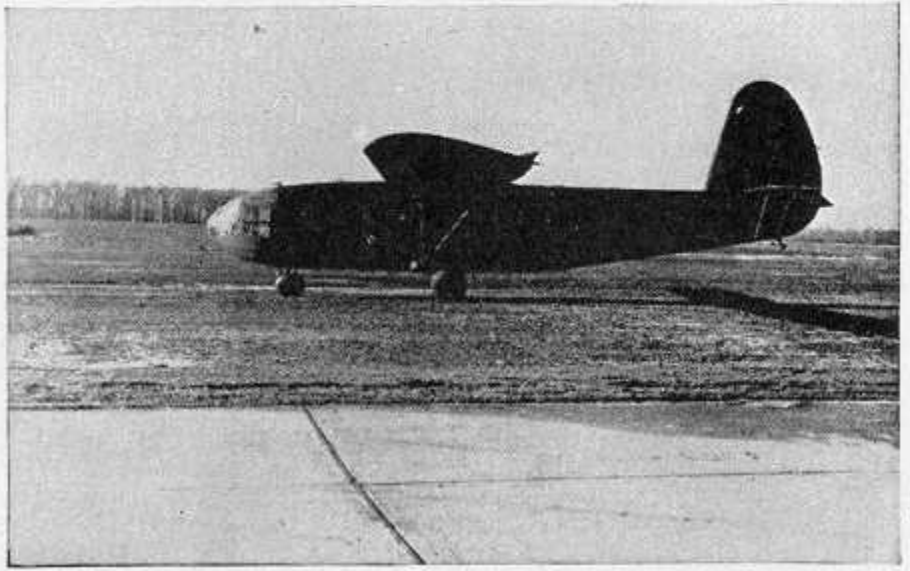
A



C



B



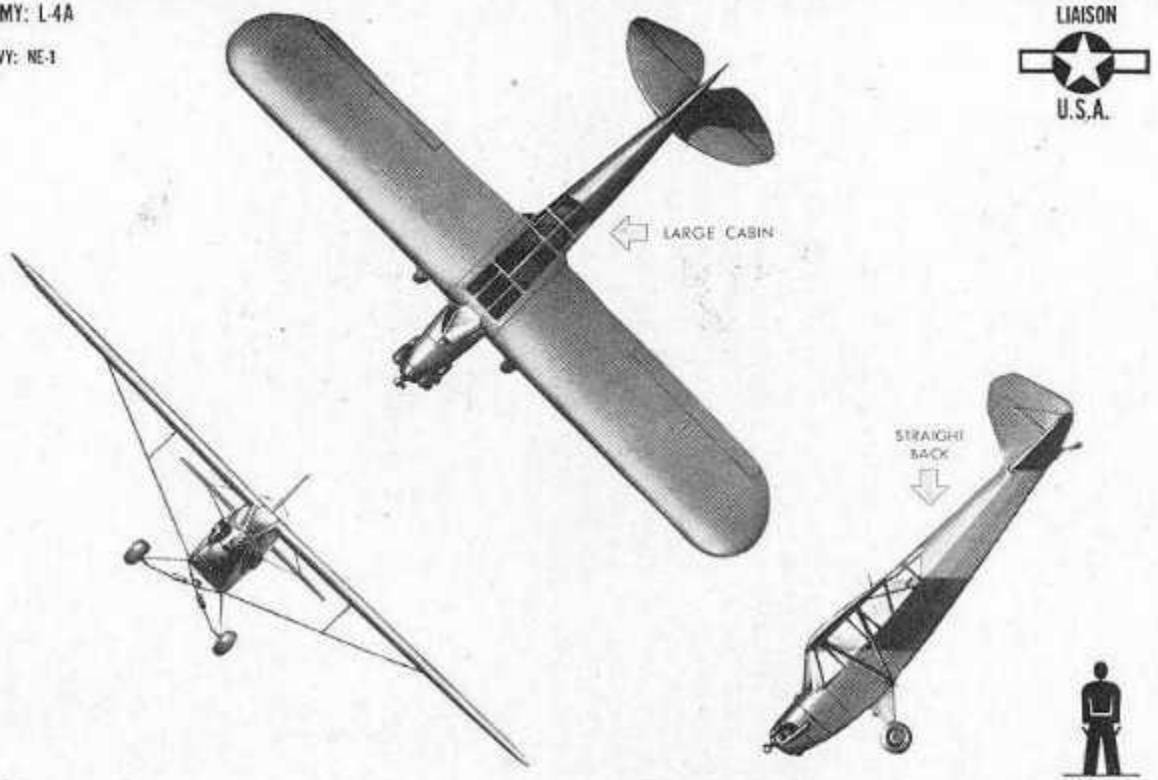
D

ARMY: L-4A

NAVY: NE-1

LIAISON

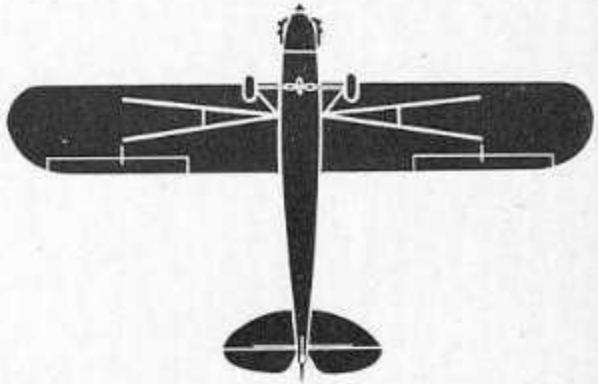
U.S.A.



PIPER
U.S.A.

SCALE
6-FOOT MAN

PIPER GRASSHOPPER



SPAN: 35 ft. 3 in. **SERVICE CEILING:**
LENGTH: 22 ft. 5 in.
MAX. SPEED: 83 m. p. h. at Sea Level

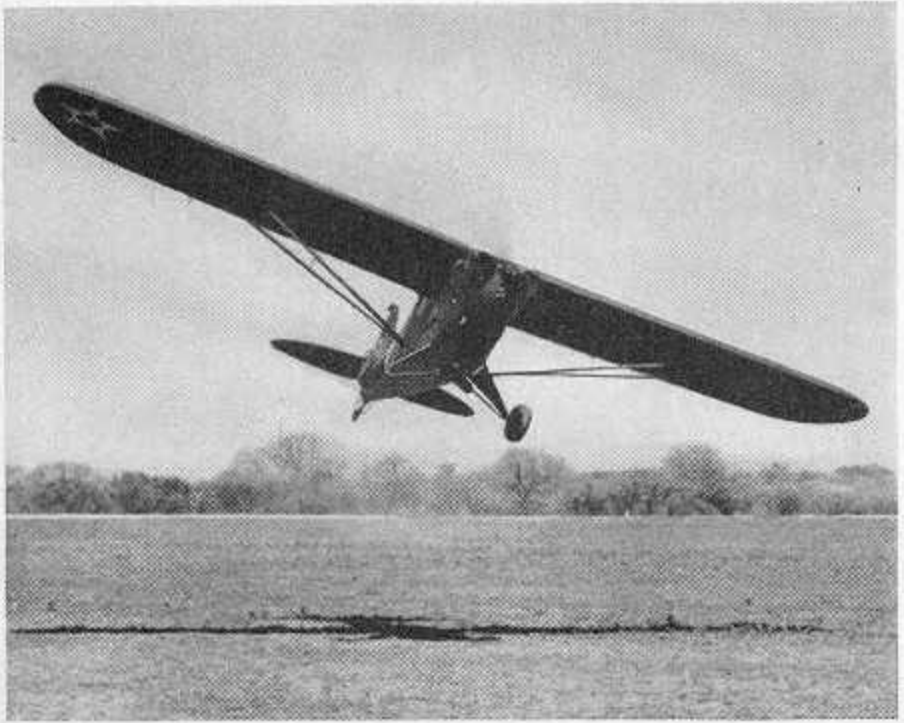
DISTINGUISHING FEATURES: Single-engine, high-wing monoplane. Large straight wing with rounded tips and V-strut bracing. Blunt nose with uncowled engine. Large glazed cockpit enclosure open through center of wing. Fixed landing gear with exposed shock pads. Angular-shaped fin and rudder with broad rounded top. Elliptical-shaped tailplane has large V-cut-out.

INTEREST: This type, one of the best-known light airplanes, was tested in maneuvers and found capable of performing valuable work in artillery observation, transport of personnel, and light communications. It has a quick take-off and lands at approximately 35 m. p. h. Like all light airplanes, caution must be used in landing this type of craft in a high wind. Under suitable flying conditions this airplane can be operated from the smallest fields and roads.

RESTRICTED

A

C



B

D

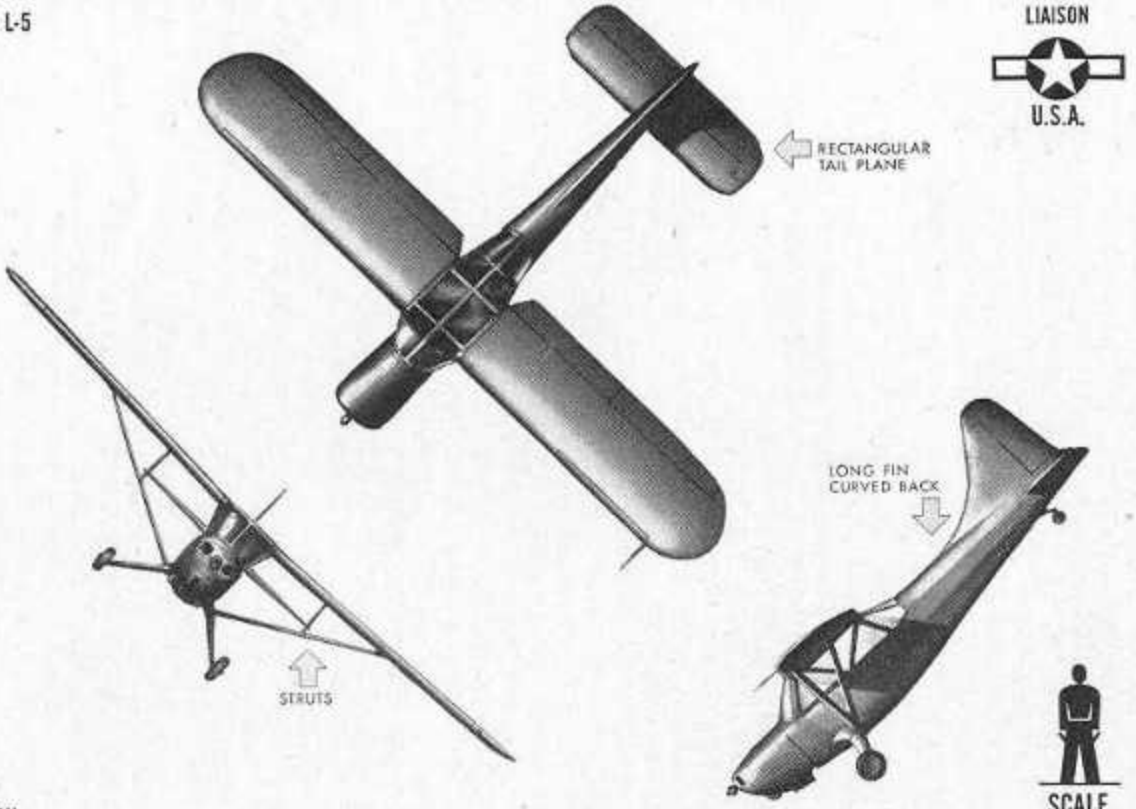
E

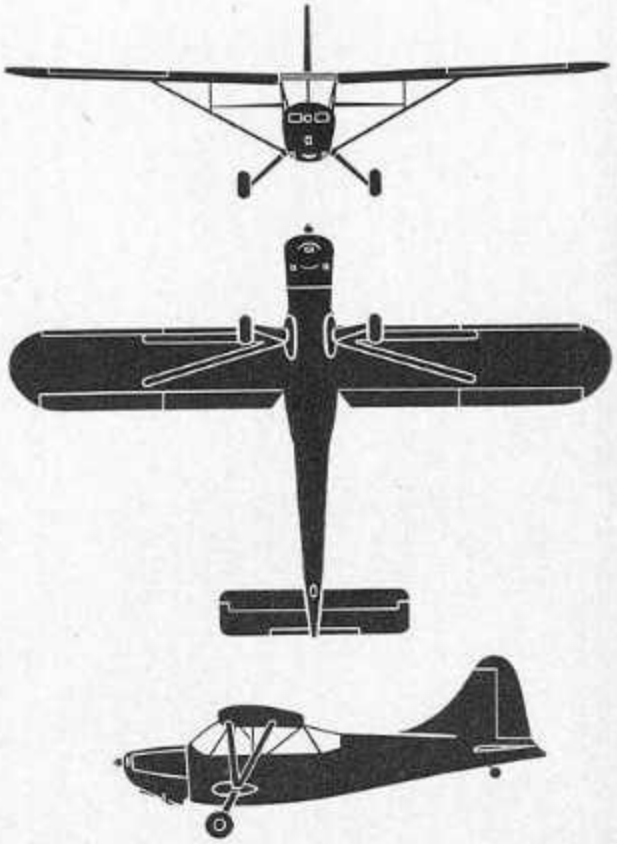
ARMY: L-5

LIAISON

U.S.A.

SENTINEL L-5





STINSON
U.S.A.

DISTINGUISHING FEATURES: High-wing single-engine monoplane. Straight wing with rounded tips and V struts. Large cockpit enclosure open through wings. Rocker-shaped fuselage. Fixed landing gear. High fin and rudder with rounded top and sweeping fairing into fuselage. Rectangular tailplane with rounded corners.

INTEREST: Powered with a 190-hp. Lycoming air-cooled engine, this development from the original Stinson 105 makes a valuable contribution for light communications and reconnaissance work. It has a maximum range of 506 miles at 112 m. p. h. This airplane can take off from a hard clay runway and clear a 50-foot obstruction in 633 feet. This performance is only exceeded by the L-1 Vigilant.

SPAN: 34 ft. **SERVICE CEILING:**
LENGTH: 24 ft. 1 in.
APPROX. SPEED: 128 m. p. h. at Sea Level

RESTRICTED

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

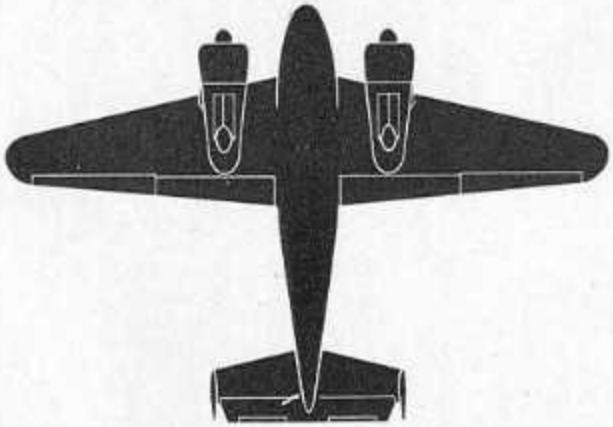
A

B

C

D

NAVIGATOR AT-7, 11

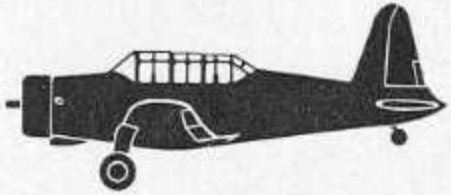


SPAN: 47 ft. 8 in. **SERVICE CEILING:**
LENGTH: 34 ft. 3 in.
APPROX. SPEED: 224 m. p. h. at 5,000 ft.

DISTINGUISHING FEATURES: Single radial engine, low-wing monoplane. Wings have equal taper with round tips. Long, prominent cockpit canopy. Fuselage bulges down beneath wing and nose extends well forward. Fixed, single-strut landing gear near leading edge of wing. High, narrow, triangular fin and rudder with round top. Tapered tailplane with round tips.

INTEREST: The Valiant is the latest in a long series of Vultee-built basic trainers. Powered with a 450-hp. radial engine and weighing over 4,000 lb., this basic trainer gives the student his first instruction on a heavier low-wing type. The power, speed, and general performance are such that the step from basic to advanced military types is not drastic. It has made a fine contribution in the training of a vast number of Allied pilots.

VALIANT BT-13, BT-15; SNV-1, 2

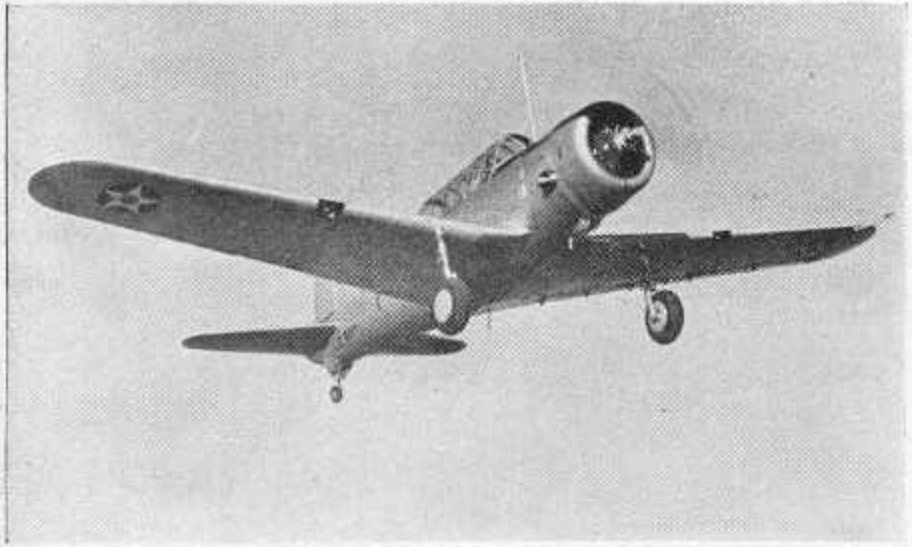


DISTINGUISHING FEATURES: Twin radial engine low-wing monoplane. Tapered wings with round tips and more pronounced taper on leading edge. Wide cabin-type fuselage with marked taper aft of wing. Twin outboard fins and rudders with rounded trailing edges and V-shaped leading edges. Tailplane has tapered leading edge and straight trailing edge.

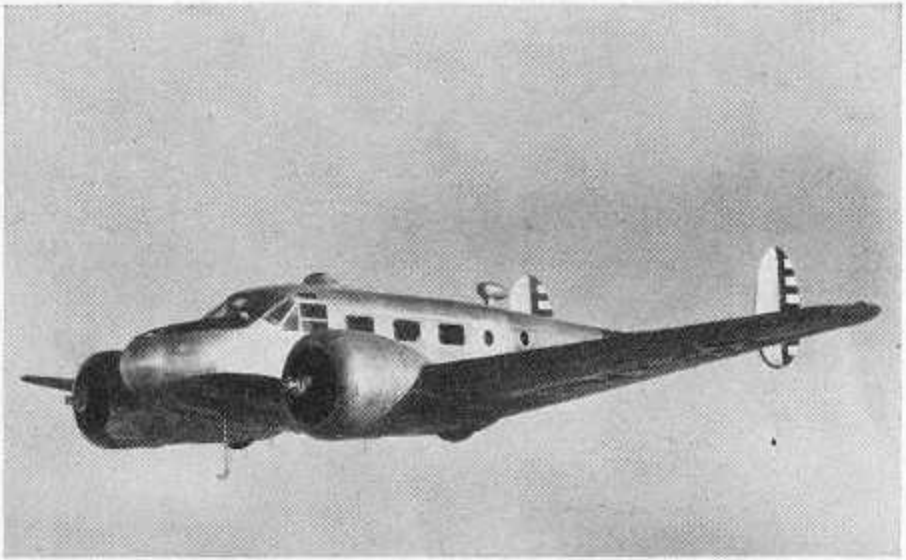
INTEREST: This navigational trainer, designated SNB–2 by the Navy, is equipped for simultaneous training of three student navigators in celestial, dead reckoning, and radio navigation. The bomber trainer version, the AT–11 Kansas (Navy SNB–1), has a blunt glazed nose for a student bombardier. This versatile Beechcraft plane is also used as a light transport and for photographic work, designated respectively the C–45 Voyager (Navy JRB) and the F–2.

SPAN: 42 ft. **SERVICE CEILING:**
LENGTH: 28 ft. 7 in.
MAX. SPEED: 166 m. p. h. at sea level

A

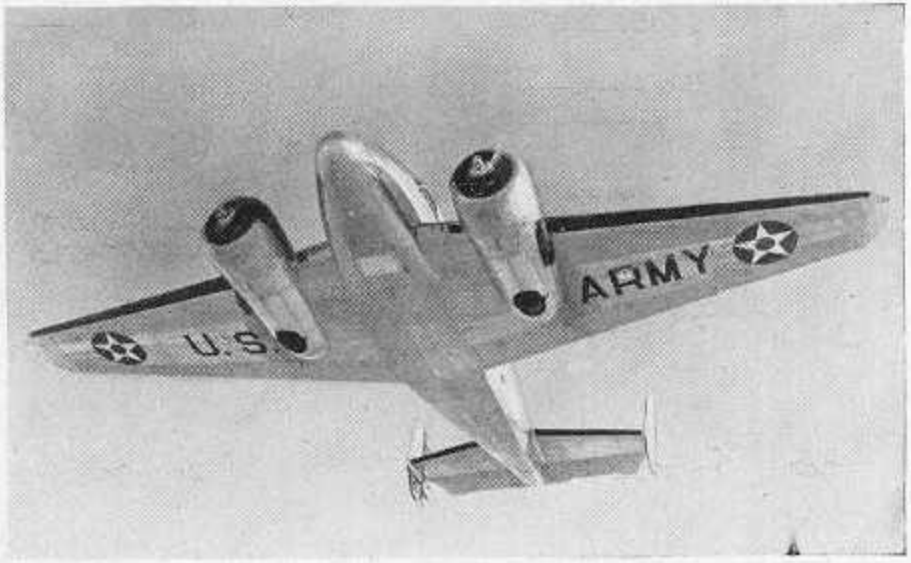


C

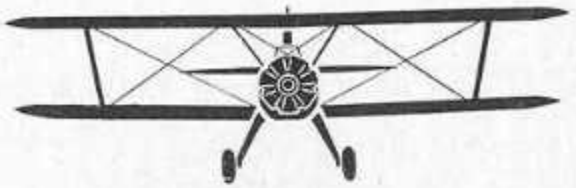


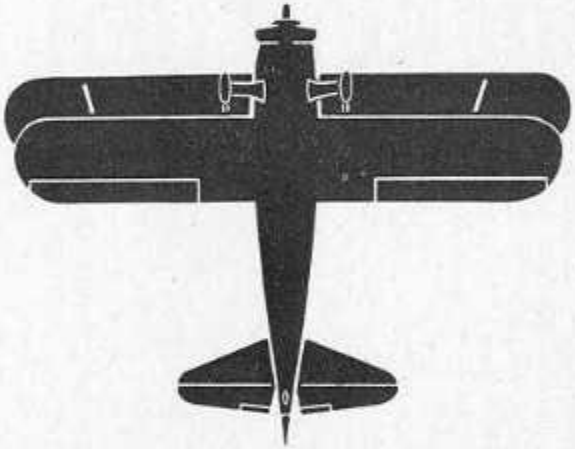
B

D



KAYDET PT-17; N2S



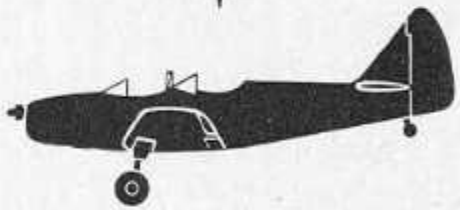


DISTINGUISHING FEATURES: Single inline engine, low-wing monoplane. Wings have moderate equal taper with rounded tips. Deep, narrow nose and two open cockpits. High tapered fin and rounded rudder. Tapered tailplane with rounded tips and cut-out. Fixed, unfaired landing gear.

INTEREST: This rugged primary trainer is powered with a Ranger six-cylinder inline air-cooled engine. It has a conventional metal fuselage and plywood covered wings built up of wood spars and ribs. This trainer is stable and is smooth and quick on the controls. The Cornell will forgive many mistakes. It has sometimes been referred to as the "cradle" of the Air Force. A modification of this plane equipped with a radial engine is designated as PT–23 and called the "Recruit."

SPAN: 32 ft. 2 in. **SERVICE CEILING:**
LENGTH: 24 ft. 10 in.
MAX. SPEED: 123 m. p. h. at sea level

CORNELL PT-19

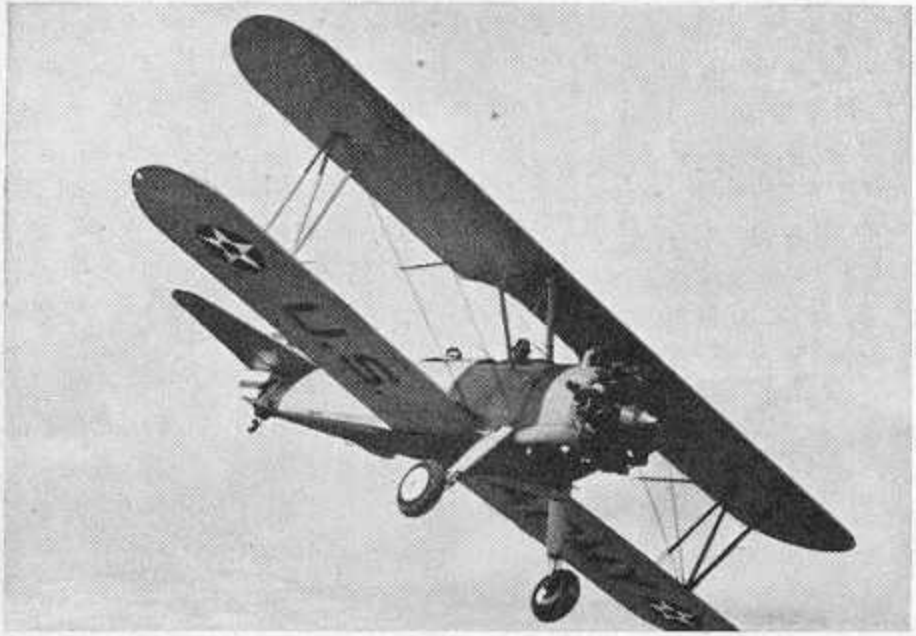


DISTINGUISHING FEATURES: Single uncowled radial engine biplane. Straight staggered wings with rounded tips and N-shaped struts. Two-place open cockpit. Wide bell-shaped fin and rudder. Fin tapers forward. Tapered tailplane with V cut-out and round tips. Fixed landing gear struts set forward of lower wing.

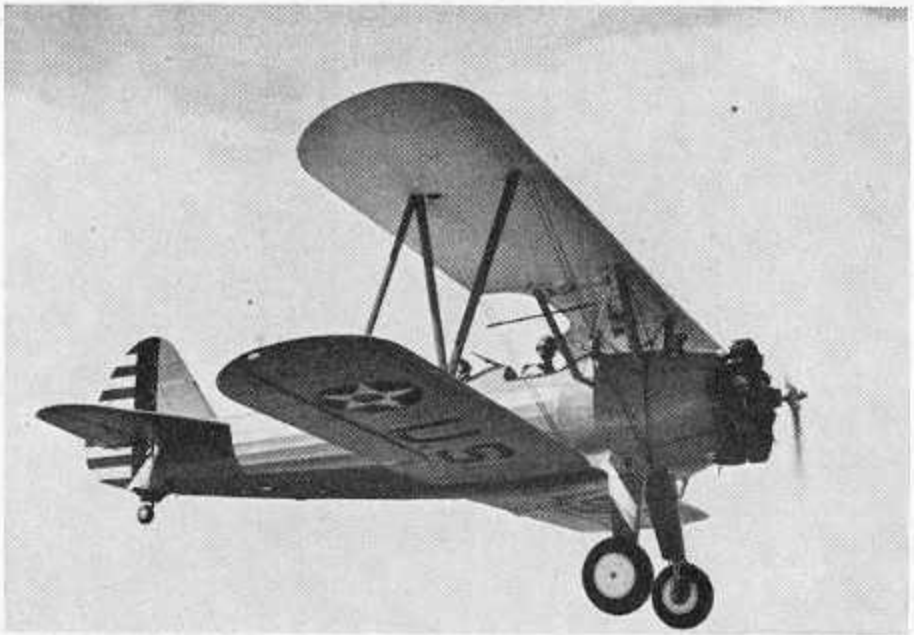
INTEREST: Many a flying cadet left the ground for the first time in a PT–17 Kaydet primary trainer. It was once described by a well-known general of Army Air Forces as "the most efficient airplane of them all." Like its big brother, the famous B–17 Fortress, the Boeing PT–17 Kaydet has built a widespread reputation for stability and ruggedness. During the 3 years of production not a single plane has been lost in flight testing. Designated as the N2S–3 by the U. S. Navy, the Kaydet has trained more fighting pilots than any other type of primary trainer.

SPAN: 35 ft, 11 in. **SERVICE CEILING:**
LENGTH: 27 ft, 8 in.
MAX. SPEED: 175 m. p. h. at sea level

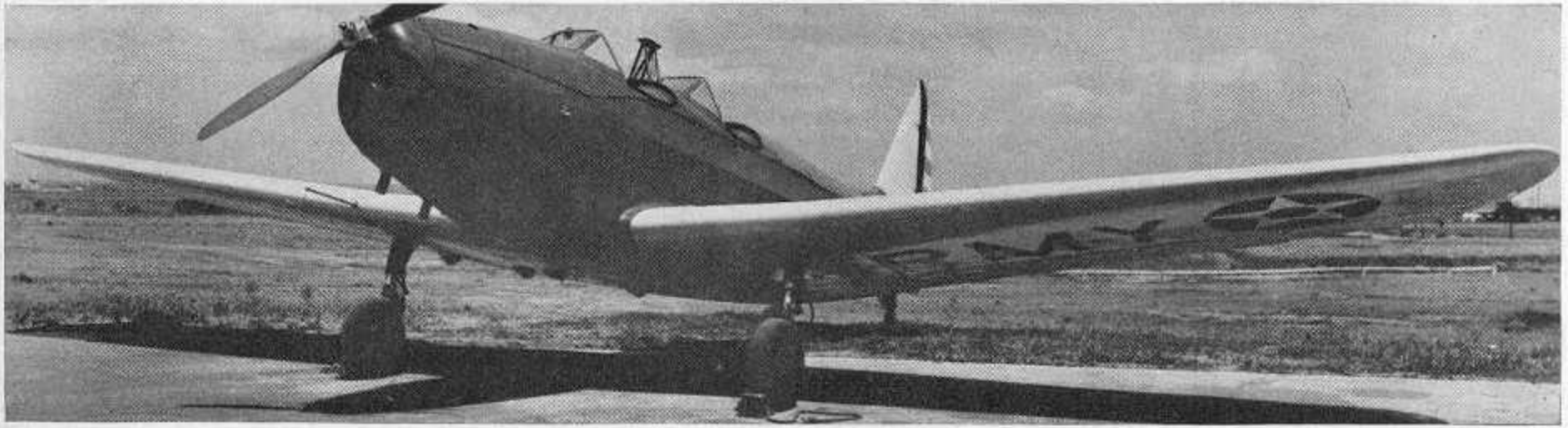
A



C



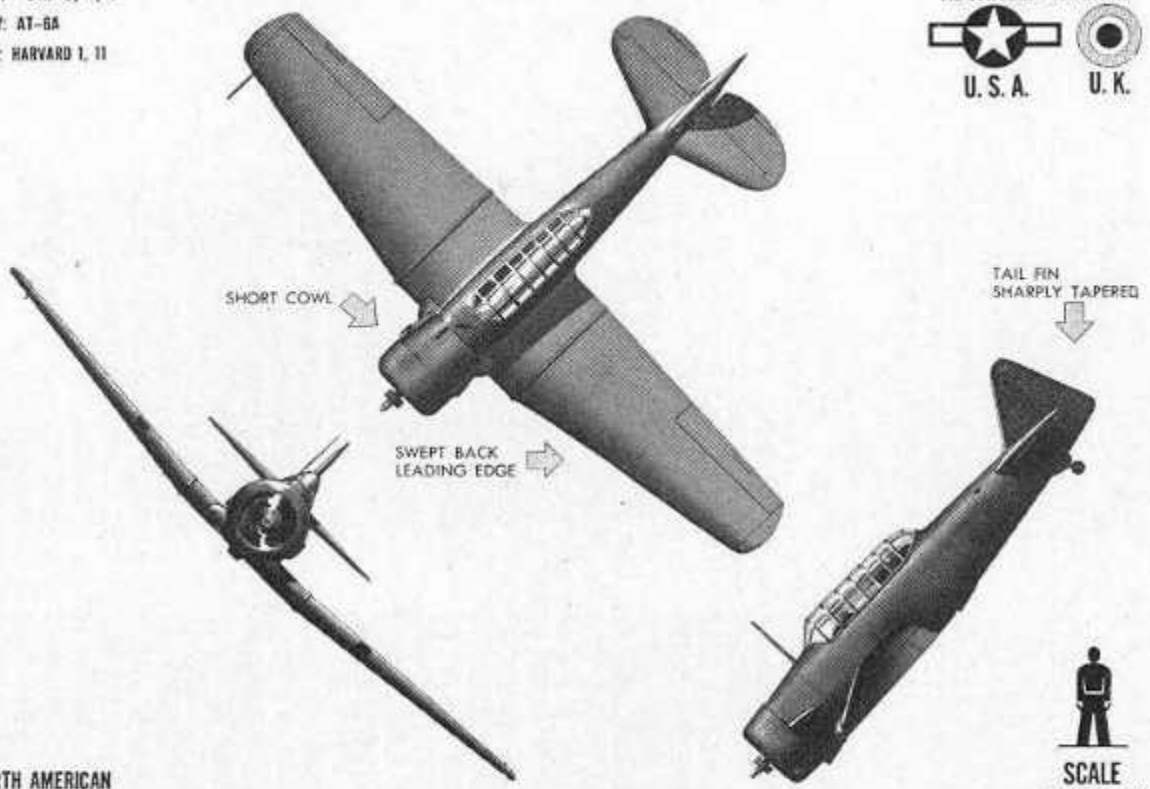
B

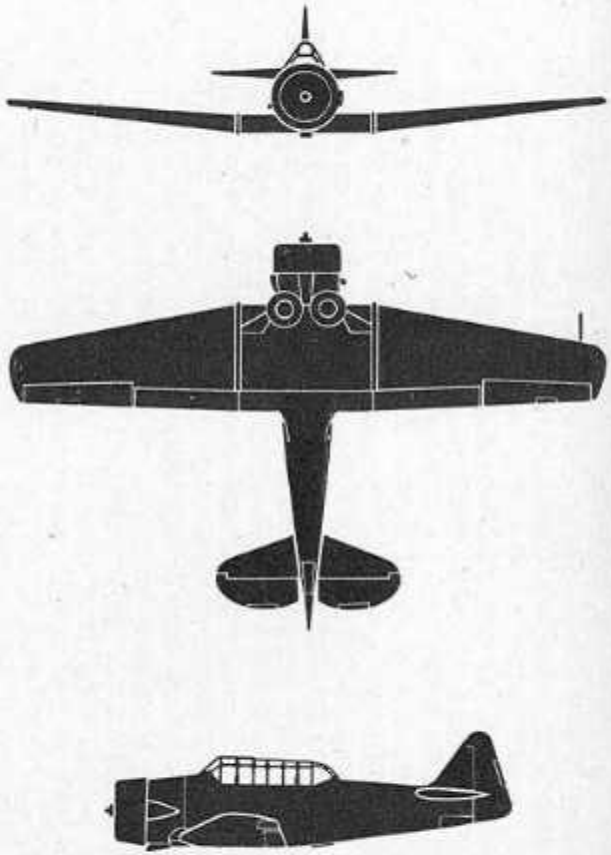


NAVY: SNJ-3, 4, 5
ARMY: AT-6A
U. K.: HARVARD I, II

ADVANCED TRAINER
U. S. A. U. K.

TEXAN SNJ; AT-6A





NORTH AMERICAN
U. S. A.

SCALE
6-FOOT MAN

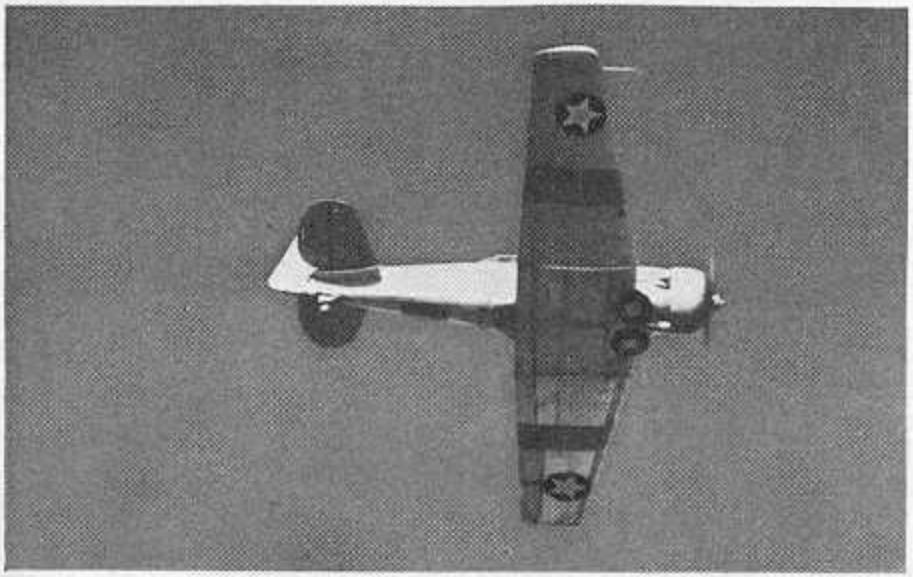
DISTINGUISHING FEATURES: Single radial engine, low-wing monoplane. The outer section of the wing has marked dihedral with pronounced taper on the leading edge. The center section is rectangular. Squarish wing tips. Large round nose. Large unfaired cockpit canopy extending beyond trailing edge of wing. High triangular fin and rudder. Tailplane tapers forward and has elliptical-shaped elevators with V cut-out.

INTEREST: Now known as the Texan (formerly the Harvard), this advanced trainer has played a vital role in the final stages of pilot training. It is noted for its sturdiness and ease of maintenance. The Texan is powered with a 550-hp. Pratt & Whitney radial engine, and has a weight of approximately 5,200 pounds. It is used as an advanced fighter trainer by nearly all of the United Nations. This plane with a few minor modifications is manufactured under license in Australia, where it is known as the Whirraway. The Whirraway has been used on occasion as a dive bomber.

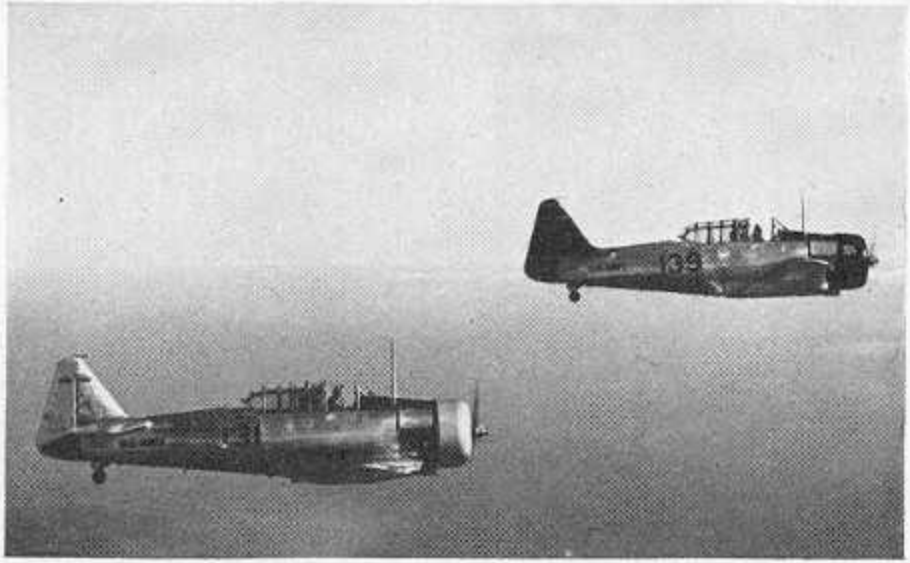
SPAN: 42 ft. **SERVICE CEILING:**
LENGTH: 29 ft.
MAX. SPEED: 210 m. p. h. at 5,000 ft.

RESTRICTED

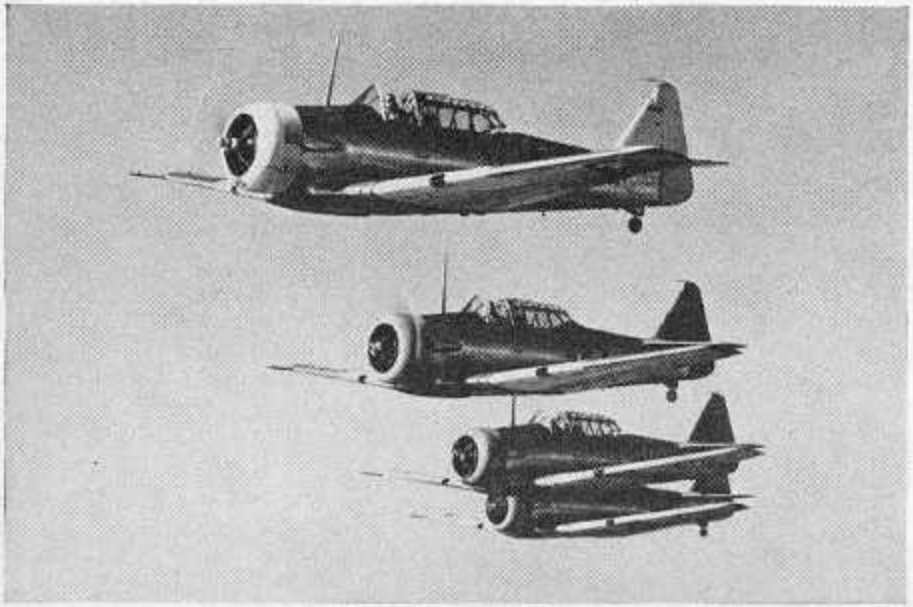
A



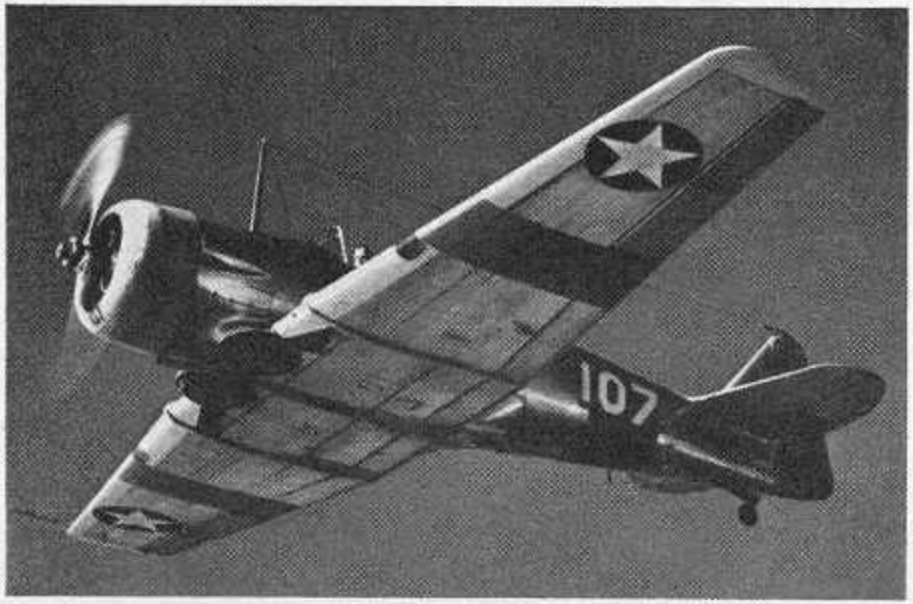
C



B



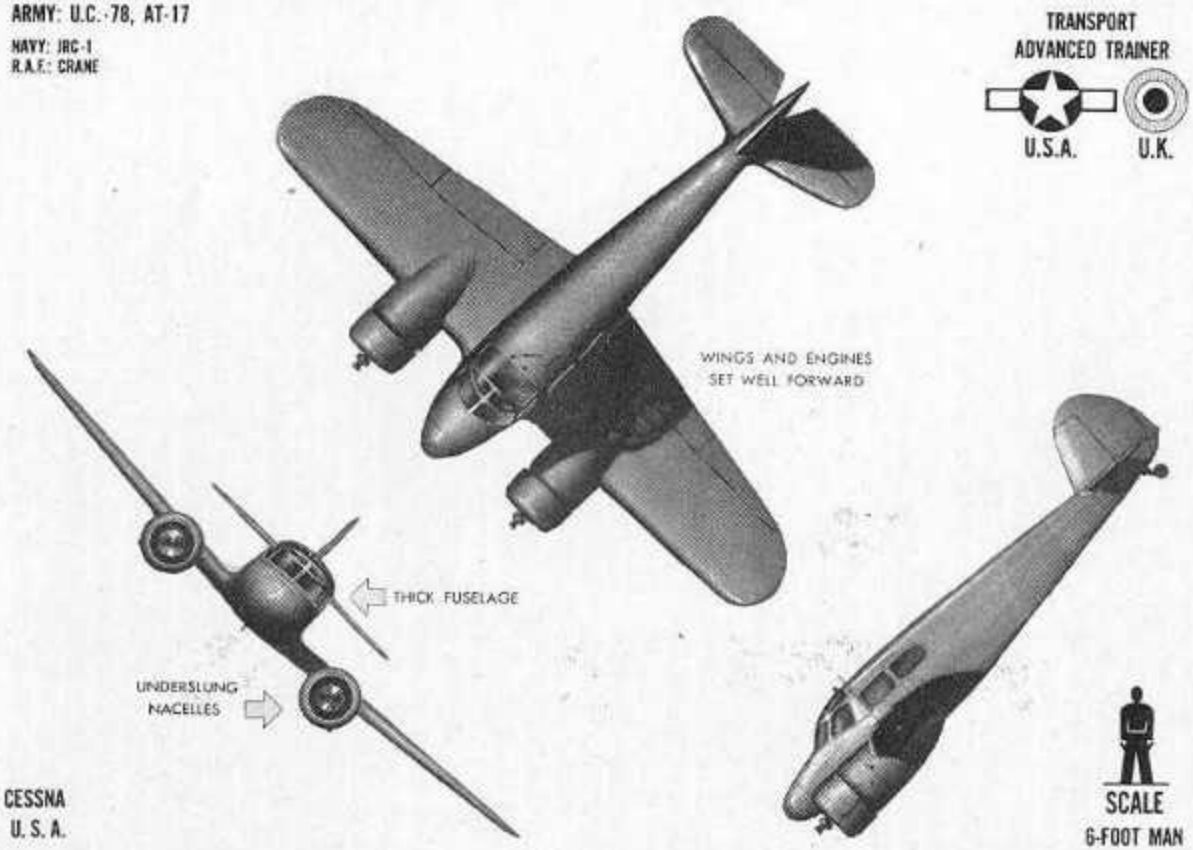
D



BOBCAT, UC-78; AT-17

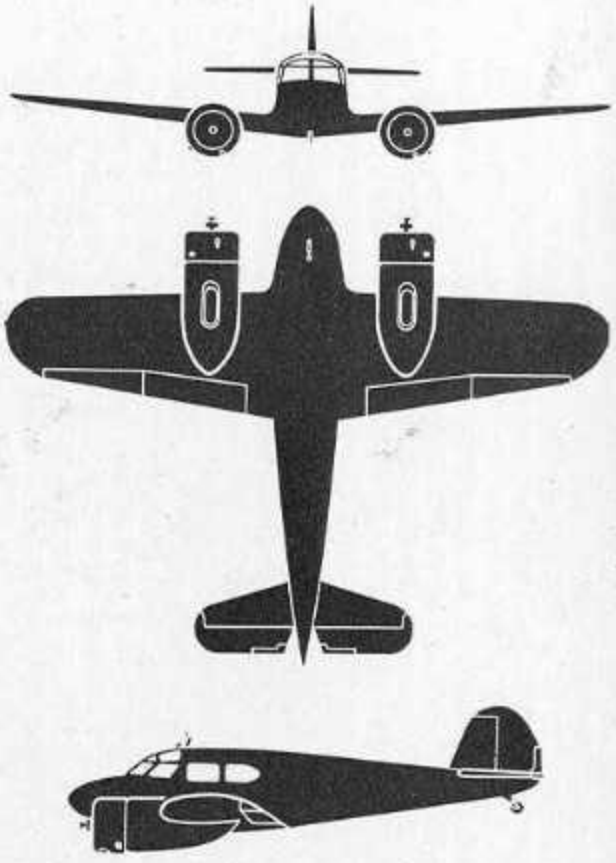
ARMY: U.C.-78, AT-17
NAVY: JRC-1
R.A.F.: CRANE

TRANSPORT
ADVANCED TRAINER
U.S.A. U.K.



SCALE
6-FOOT MAN

CESSNA
U. S. A.



SPAN: 41 ft. 11 in.
LENGTH: 32 ft. 9 in.
MAX. SPEED: 195 m. p. h. at Sea Level
SERVICE CEILING:

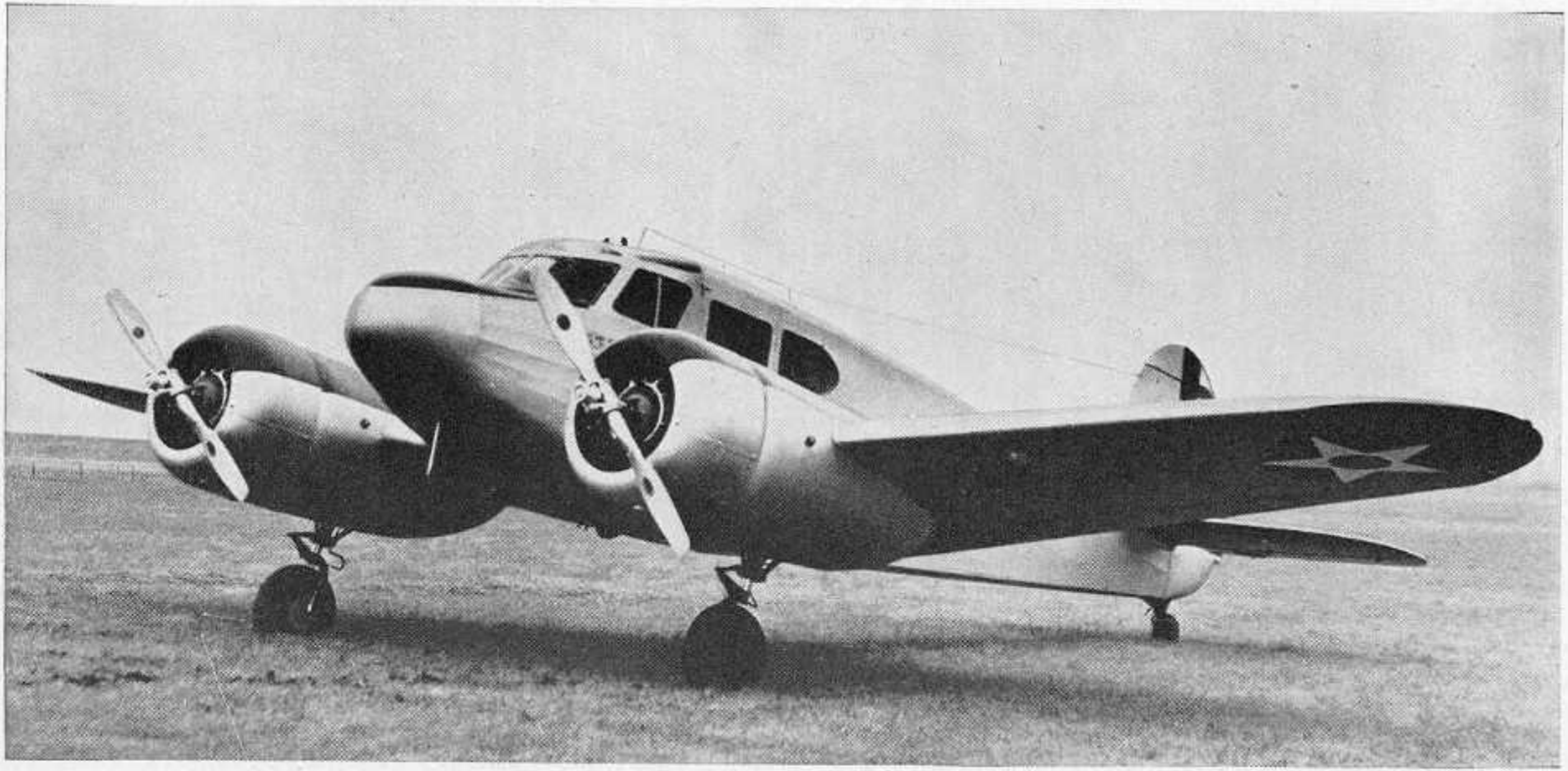
DISTINGUISHING FEATURES: Twin radial engine, low-wing monoplane. Moderate taper to wings. Rounded tips. Engines are underslung. Short-nose fuselage has large faired cabin and tapers sharply rearward. Bell-shaped single fin and rudder. Taper on leading edge of tailplane only.

INTEREST: The Bobcat has been used as an advanced trainer under the Joint Air Training Plan. It differs only slightly from the Cessna T–50 five-seat commercial cabin plane. It is used by the USAAF as a light transport under the designation of UC–78. As a trainer it is known as the AT–17. This aircraft is also used by the Royal Canadian Air Force, where it is referred to as the Crane. Both Canadian and U. S. models are fitted with two 225-hp. Jacobs radial engines.

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

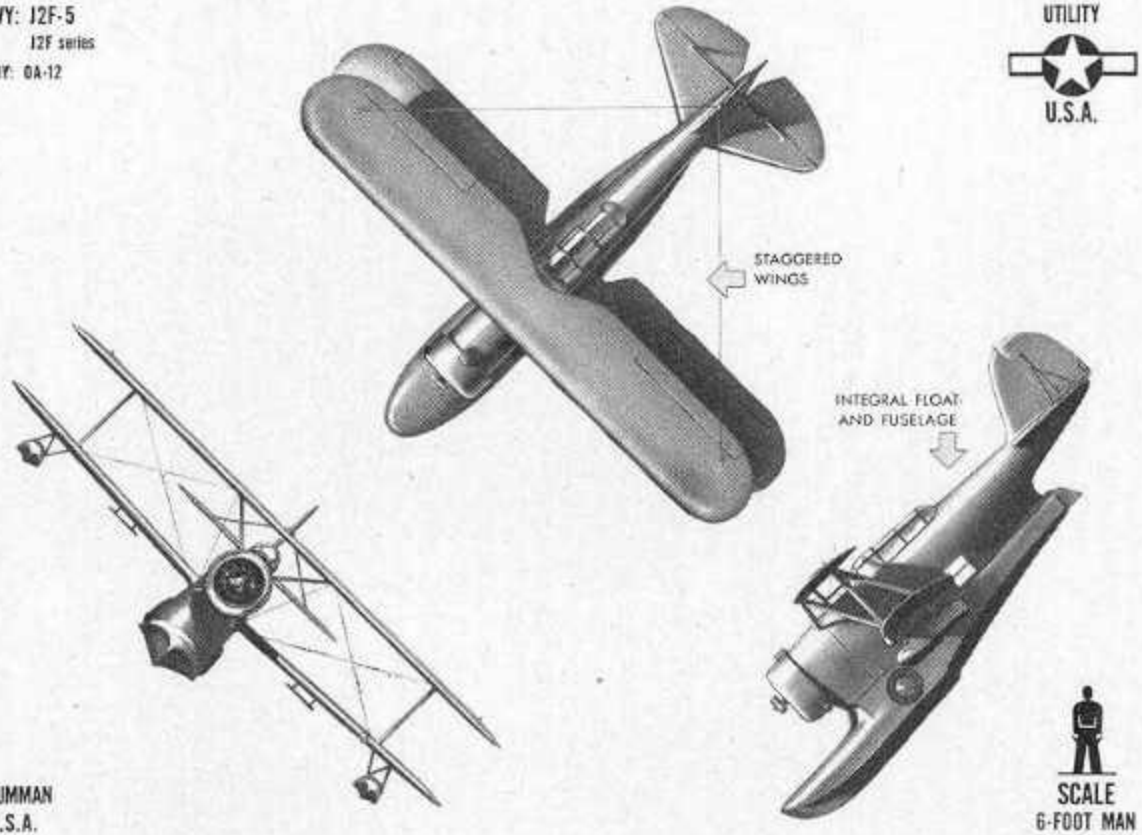
RESTRICTED

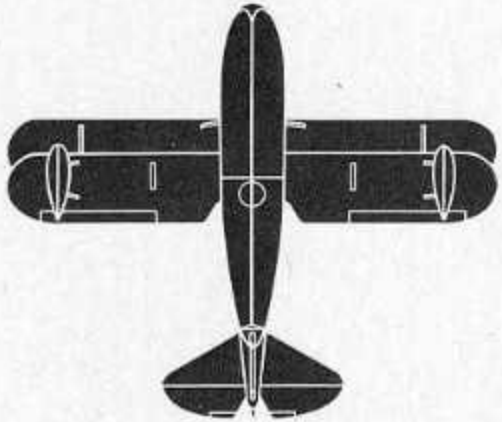


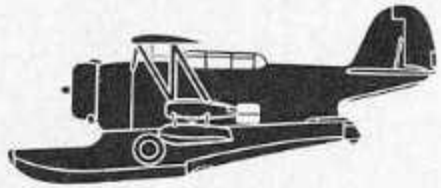
NAVY: J2F-5
J2F series
ARMY: OA-12

UTILITY
U.S.A.

DUCK J2F







GRUMMAN
U.S.A.

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Single radial engine biplane. Large single float faired into underside of fuselage giving a heavy squat appearance. Straight, staggered, equal-span wings have rounded tips. N-strut bracing and small fixed wing-tip floats. Unfaired cockpit enclosure. Round, tapered fin and rudder. Horizontal tailplane sharply tapered on leading edge with small curved tips, curved trailing edge and cut-out in center.

INTEREST: This odd-looking amphibian floatplane has been a standard utility plane in the Navy since 1937. It is used aboard battleships and cruisers as a "Command" plane and can also be used for photographic work.

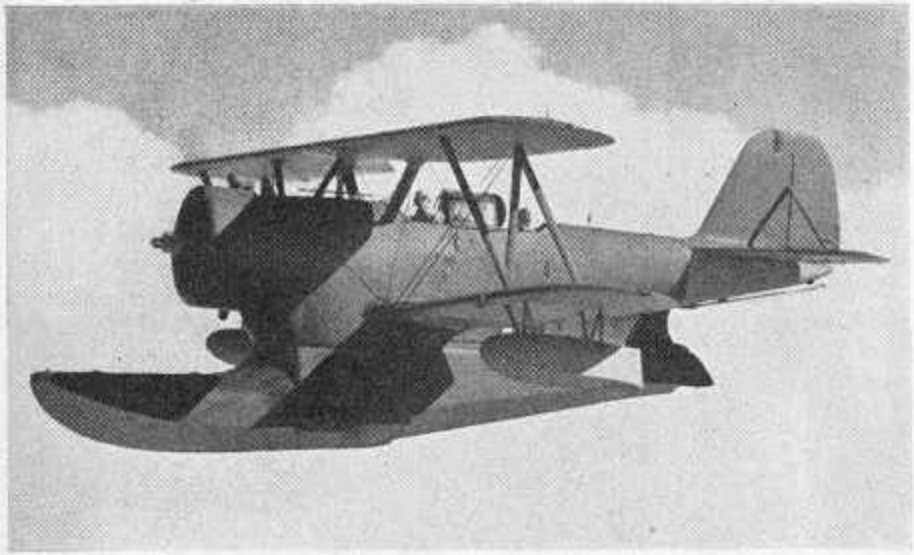
SPAN: 39 ft.
LENGTH: 34 ft.
MAX. SPEED: 176 m. p. h. at 3,200 ft.
SERVICE CEILING: 18,900 ft.

RESTRICTED

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

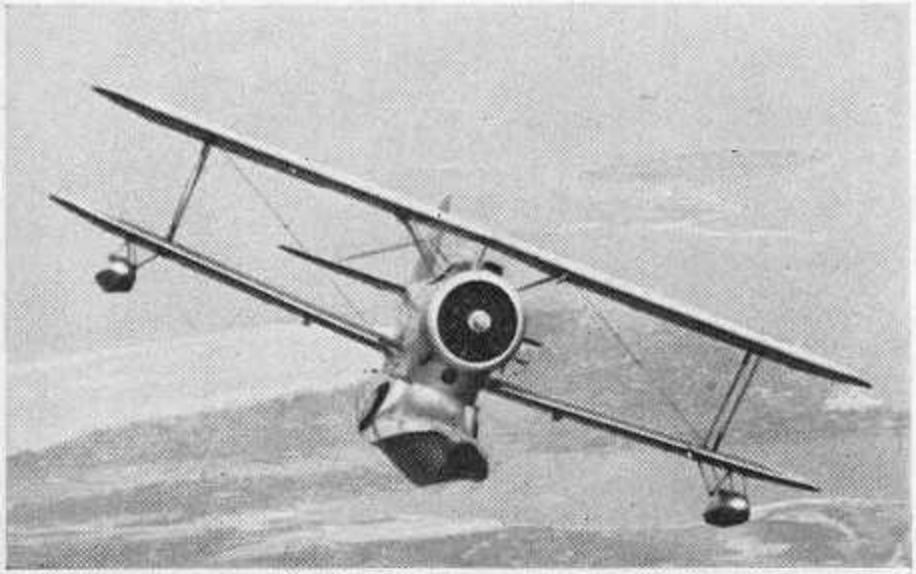
SUPPLEMENT ONE { WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

A



C

B



D

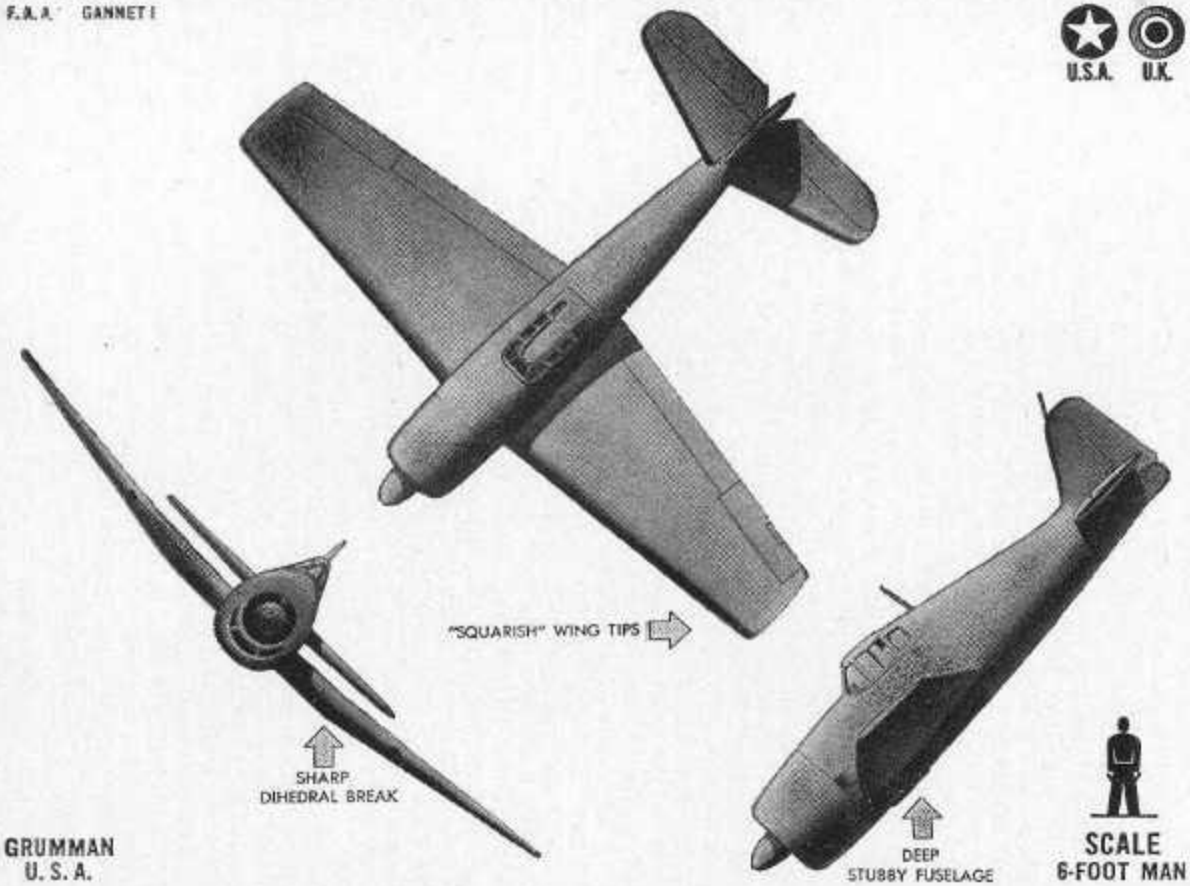
U. S. NAVY AIRCRAFT

NAVY: F6F-3

F.A.A. GANNET I

FIGHTER

U.S.A. U.K.



SCALE 6-FOOT MAN

GRUMMAN
U. S. A.

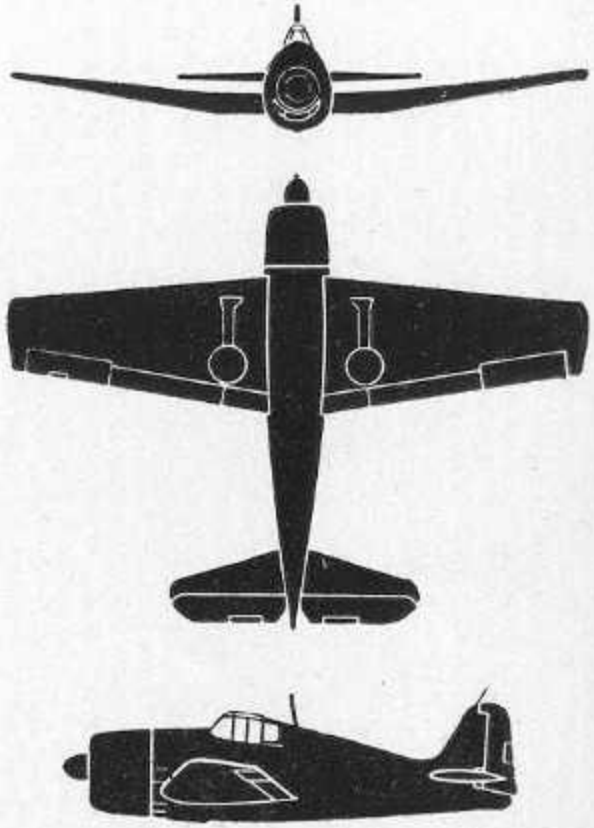
DISTINGUISHING FEATURES: Radial engine, low mid-wing monoplane. Large propeller spinner above center of cowling. Inboard panel of wing horizontal; outboard panels are dihedral. Deep egg-shaped fuselage. High narrow cockpit with straight line running down to tail. Fin and rudder have bluntly rounded top and steep leading and trailing edges. Wing has equally tapered leading and trailing edges and blunt tips. Stabilizer and elevator are long with tapered leading edge, straight trailing edge, and rounded tips.

INTEREST: This new Navy fighter is a carrier-based airplane designed by the Grumman Co. as a successor to the F4F-4. Its performance is similar in many respects to that of the Navy's F4U "Corsair."

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

F6F "HELLCAT"

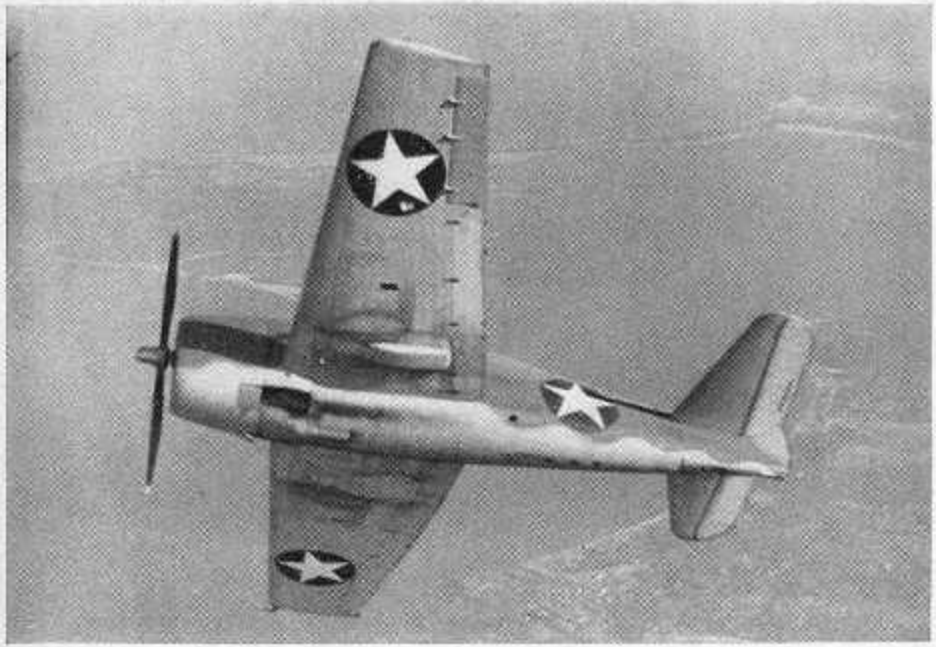


SPAN: 42 ft. 10 in.
LENGTH: 33 ft. 6¼ in.
APPROX. MAX. SPEED:

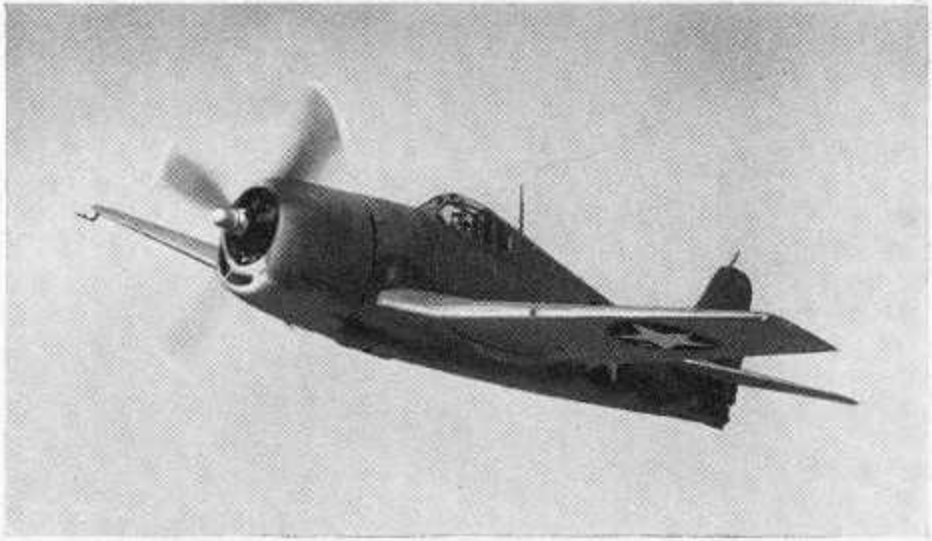
SERVICE CEILING:

RESTRICTED

A

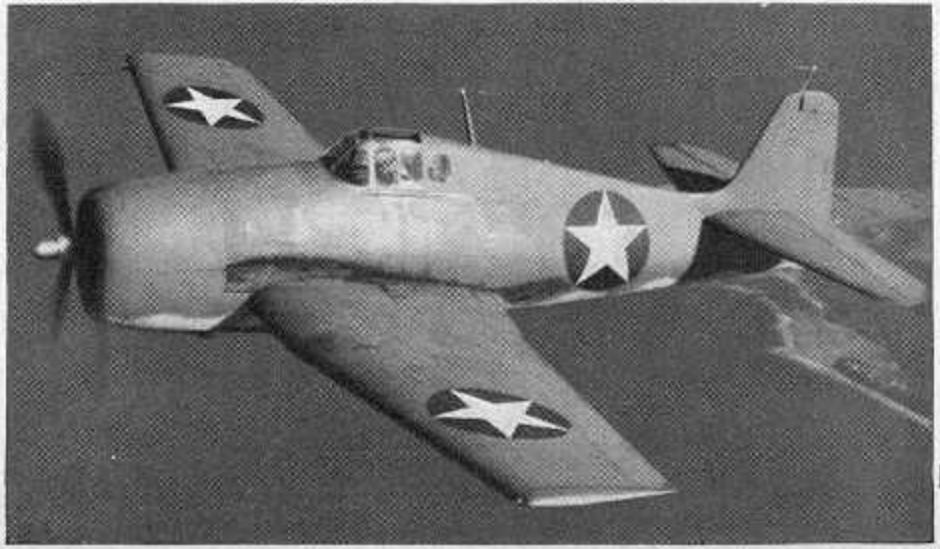


C



B

D

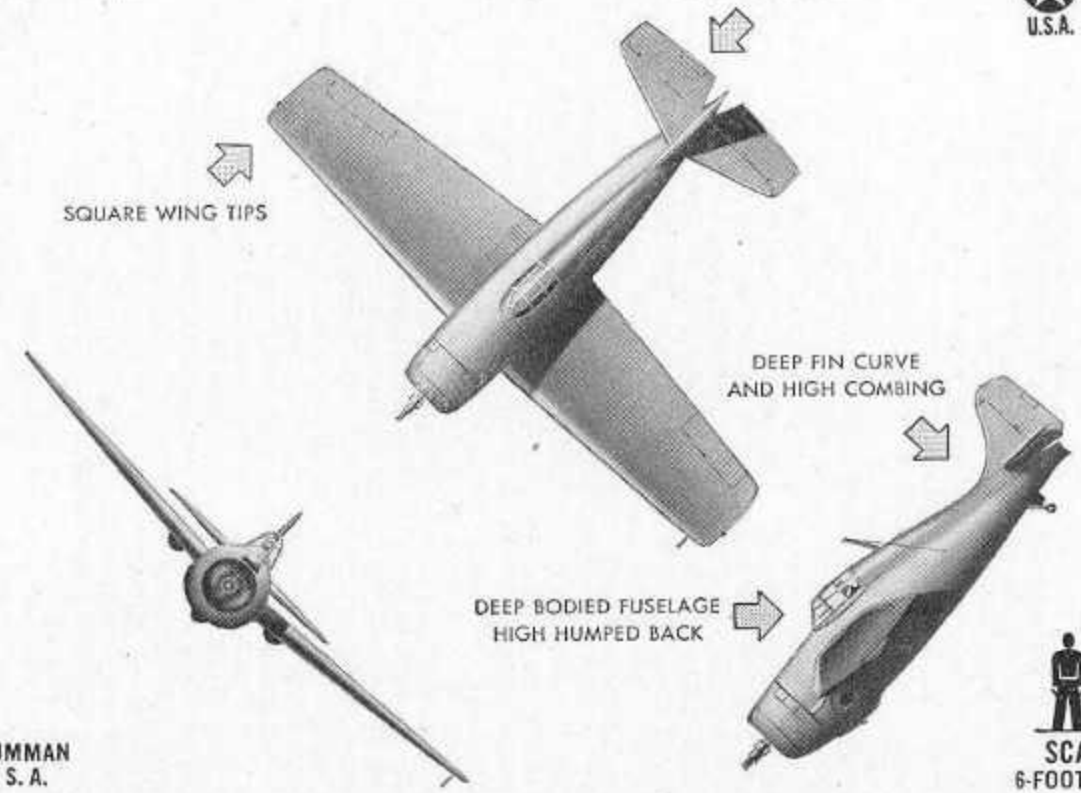


NAVY: F4F-3, 4
F4F series: FM-1
F. A. A.: MARTLET I, II

FIGHTER

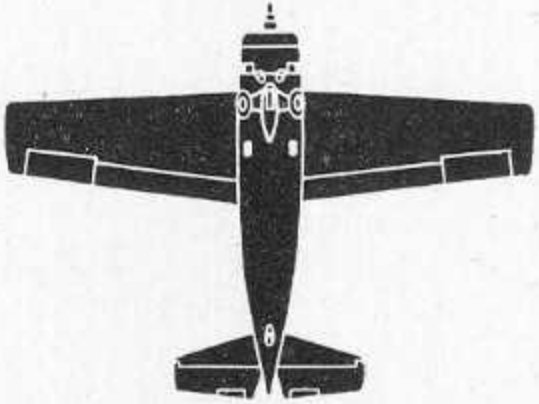
U.S.A. U.K.

F4F "WILDCAT"



GRUMMAN
U. S. A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Radial engine mid-wing monoplane. Dihedral from wing roots. Raised cockpit enclosure with straight line running down to the tail. Wings have medium, equal taper with square tips. Fin and rudder have a square top and rather straight trailing edge. Tail tip has an unfinished appearance due to the arrester hook it houses.

INTEREST: This fighter, called the "Martlet" by the British, can be based either on carriers or on land. It is an excellent aircraft and was probably the best carrier-based fighter in battle service until the coming of the newer, heavier, and faster Corsair which is now gradually replacing it. The Wildcat has shown altitude performance approaching that of the Zero. This aircraft was used by the Marines on Wake Island. Lt. Commander O'Hare was flying one when he shot down five Jap aircraft during a single operation.

SPAN: 38 ft.
LENGTH: 28 ft. 11 in.
APPROX. MAX. SPEED: over 310 m. p. h.
SERVICE CEILING: about 33,000 ft.

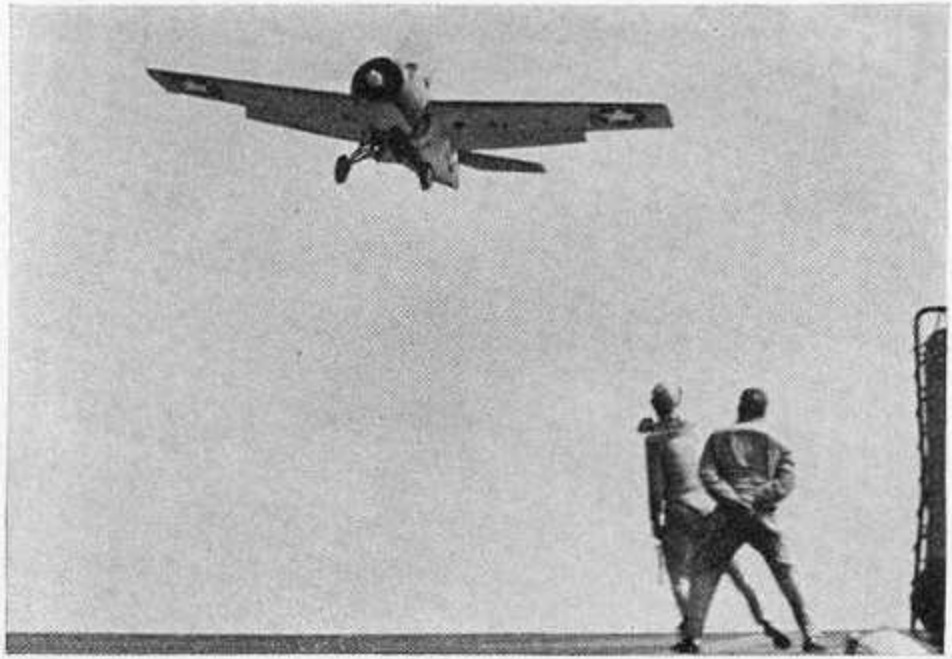
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

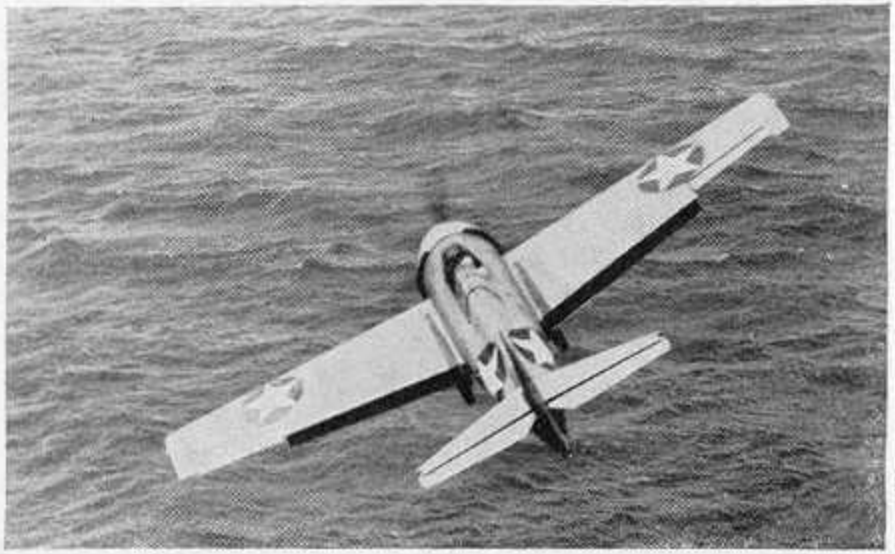
A

B



C

D

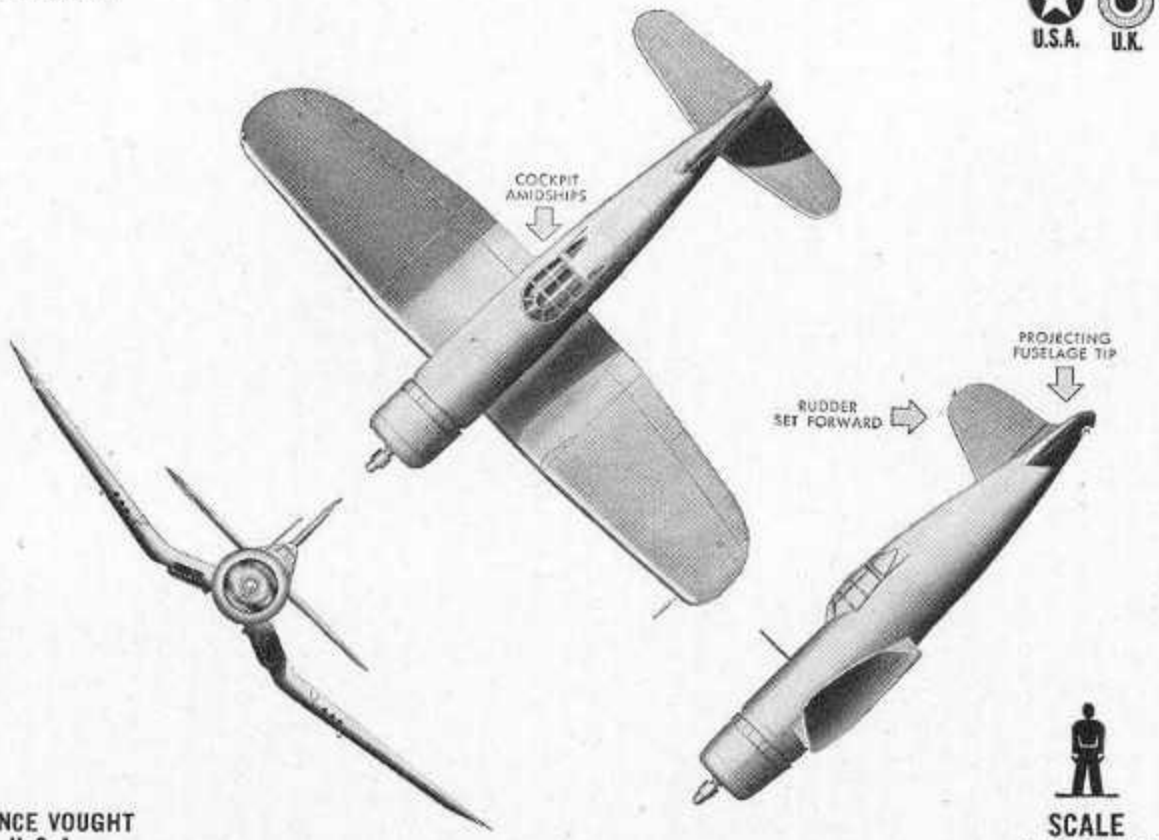


NAVY: F4U-1
F3A-1; FG-1
F. A. A.: CORSAIR I

FIGHTER

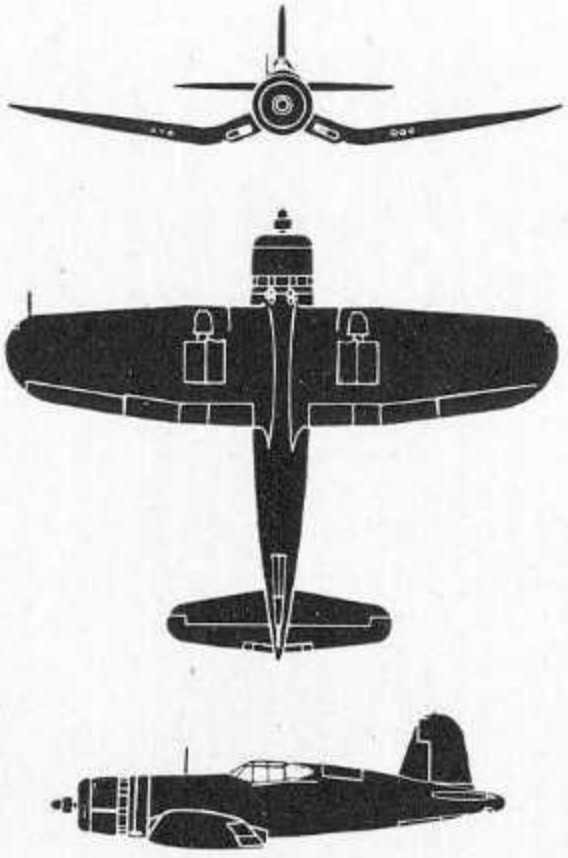
U.S.A. U.K.

F4U "CORSAIR"



CHANCE VOUGHT
U. S. A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Single radial engine low-wing monoplane. Inverted gull wing. Outer section of the wing is slightly tapered with rounded tips. Nose is medium length and blunt. Fuselage is round with a small cockpit enclosure. The single fin-and-rudder is equally tapered and is rounded on top and set forward of elevators.

INTEREST: This is one of the fastest ship-borne fighters in operation today. The large inverted gull wing was designed to give added clearance for the long propeller blades which are required to absorb the output of the F4U's 2000 h. p. engine. The lower wing position due to the gull design also increases the air cushion effect between deck and plane during landing.

SPAN: 41 ft.
LENGTH: 33 ft. 4 in.
APPROX. MAX. SPEED: 365 m. p. h.

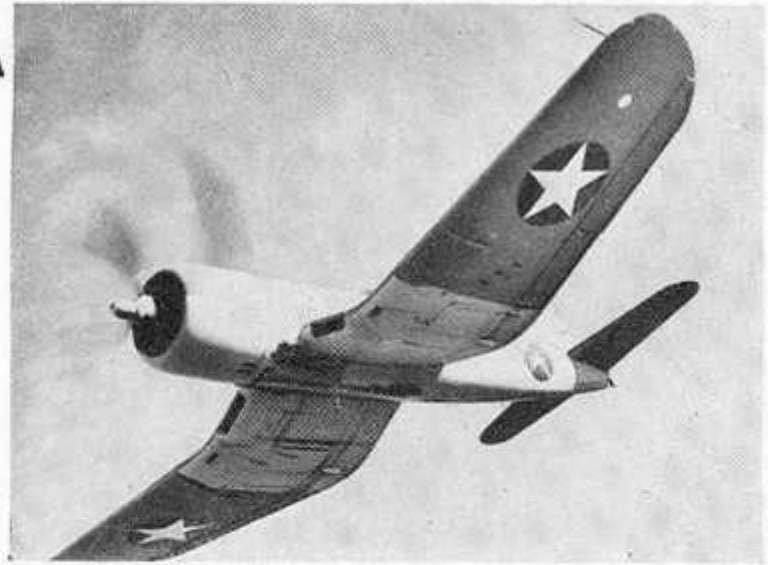
SERVICE CEILING:
over 34,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A



C

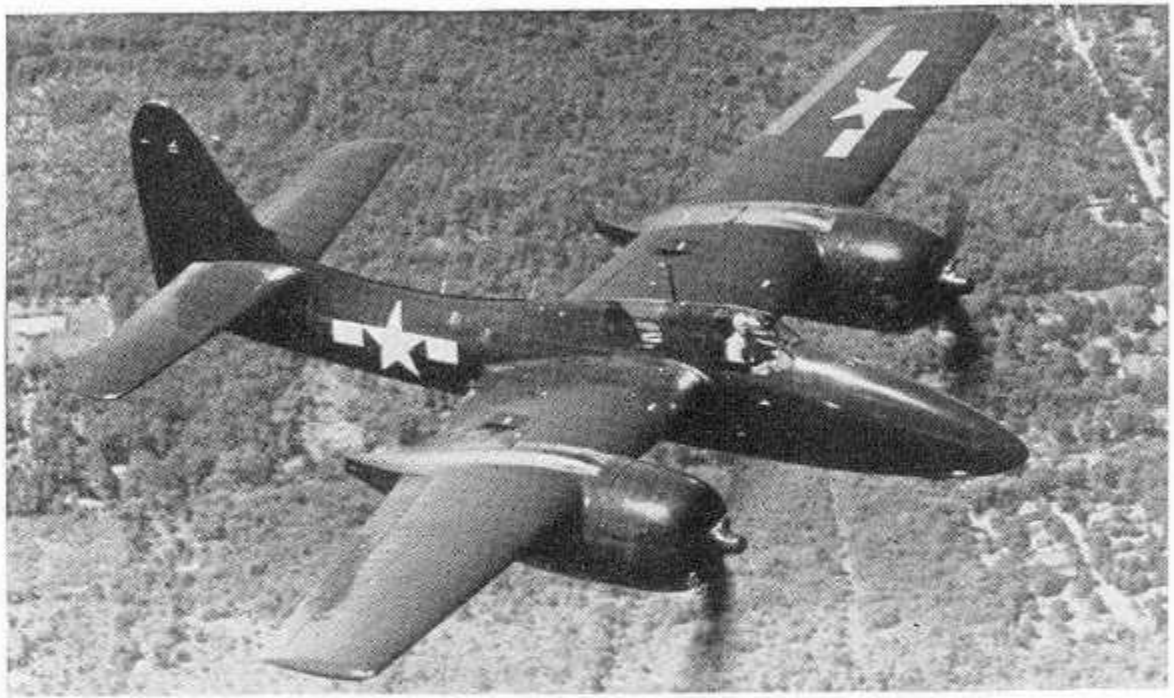
B

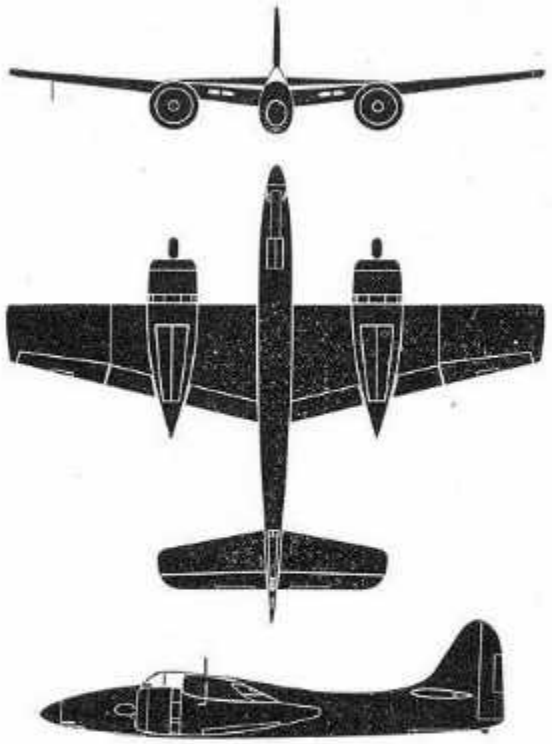
D

FIGHTER

U. S. A.

F7F TIGERCAT



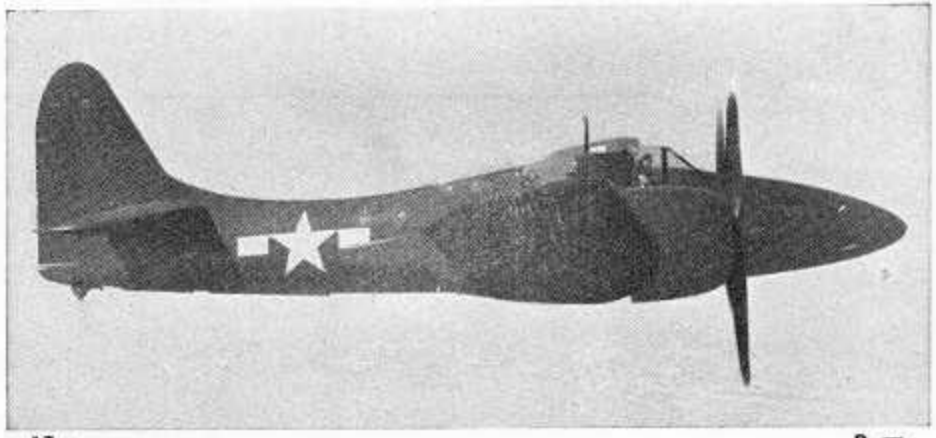


SPAN: 51 ft. 6 in. **SERVICE CEILING:** 36,000 ft.
LENGTH: 45 ft. 5 in.
APPROX. MAX. SPEED: Over 400 mph.

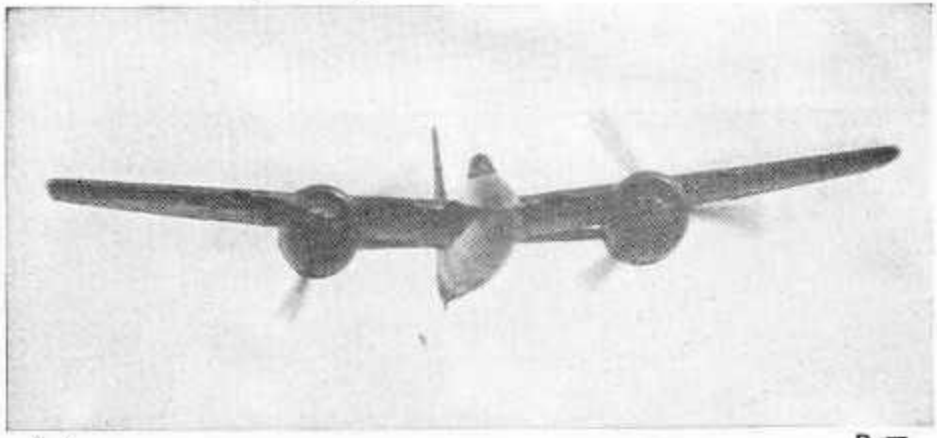
DISTINGUISHING FEATURES: The F7F is a twin-engine, midwing monoplane with single fin and rudder. Wing has a straight leading edge, sharply tapered trailing edge, and squared off tips. Fat underslung nacelles project beyond the trailing edge. Nose is long, pointed, and smoothly streamlined. The two sectioned cockpit fairs smoothly into the narrow sleek fuselage. High and rather narrow fin and rudder sweeps forward into the fuselage. Long tailplane has tapered leading edge, straight trailing edge, and slightly raked tips.

INTEREST: Known as the Tigercat, the F7F is Grumman's first twin-engine fighter design since the experimental F5F Skyrocket appeared in 1940. It is a radical departure from the chunky fuselage designs of previous Grumman fighters, but retains their angular wing shape. The F7F was developed for use from carrier decks and will probably be used as a land-based night fighter and twin-engine fighter by the Navy and Marines.

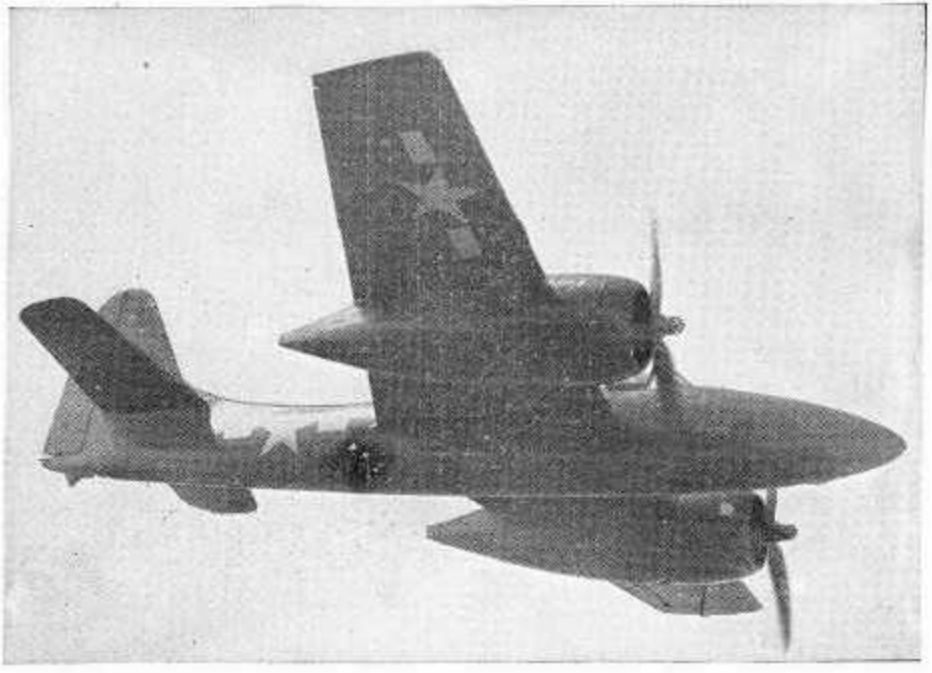
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

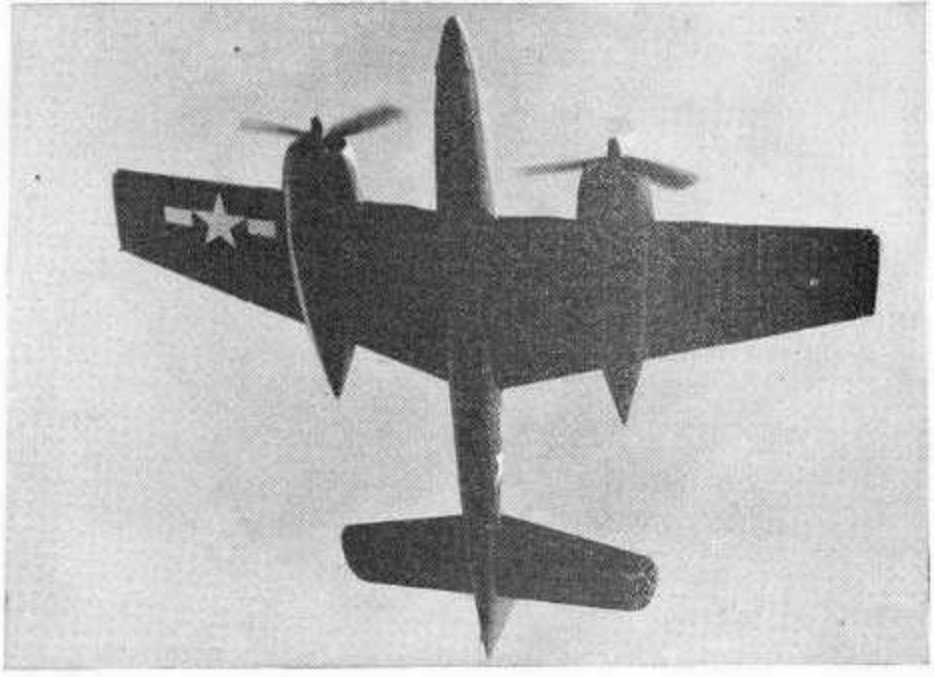


A ▲ B ▼



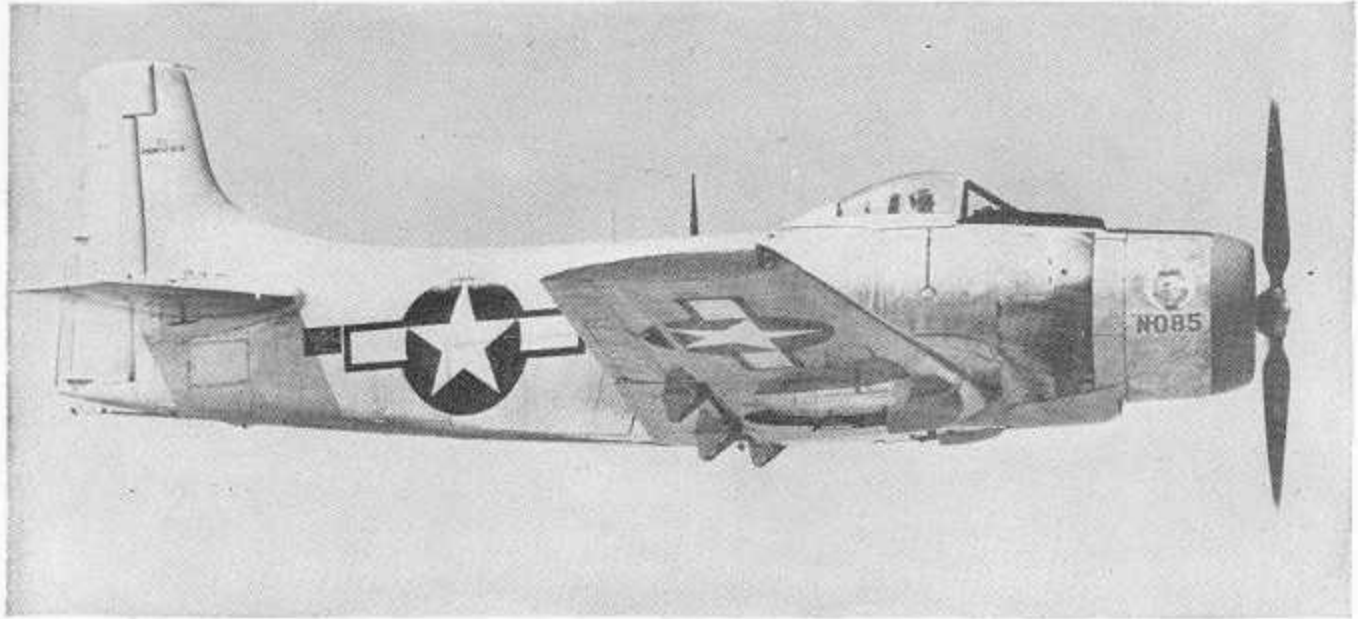
C ▲ D ▼

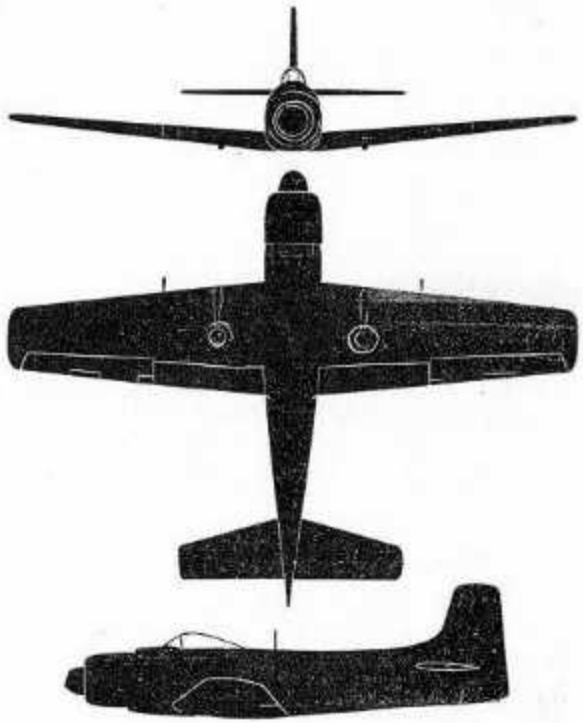




AD SKYRAIDER

U.S. NAVY
DOUGLAS

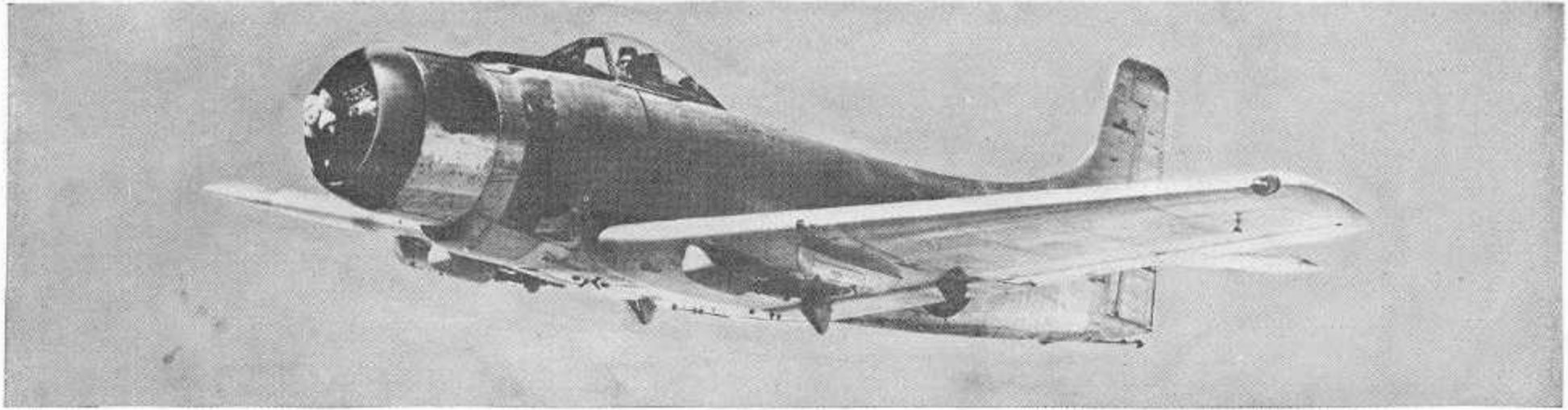


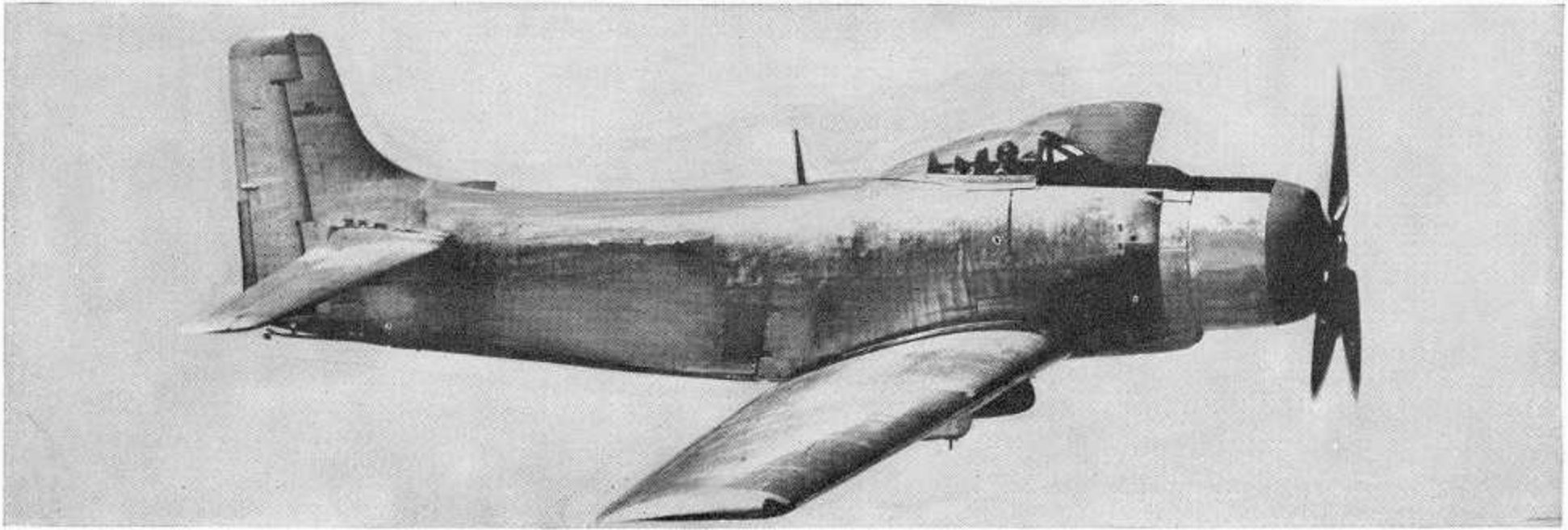


INFORMATION The Skyraider is one of the Navy's answers to the single seat, high speed, bombing torpedo plane. Housing a Wright 3350-24W engine, the AD has the power to carry 4,000 lbs. of bombs and rockets, and the load may include a torpedo slung externally. The Skyraider is equipped with bullet proof tanks, armor protection, and flak resisting glass. For recognition note the bubble canopy well forward, the thick after fuselage, and the faired in rudder.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
50'–0"	39'–8"	14,500	over 350	over 4,000	28,200	over 1,700

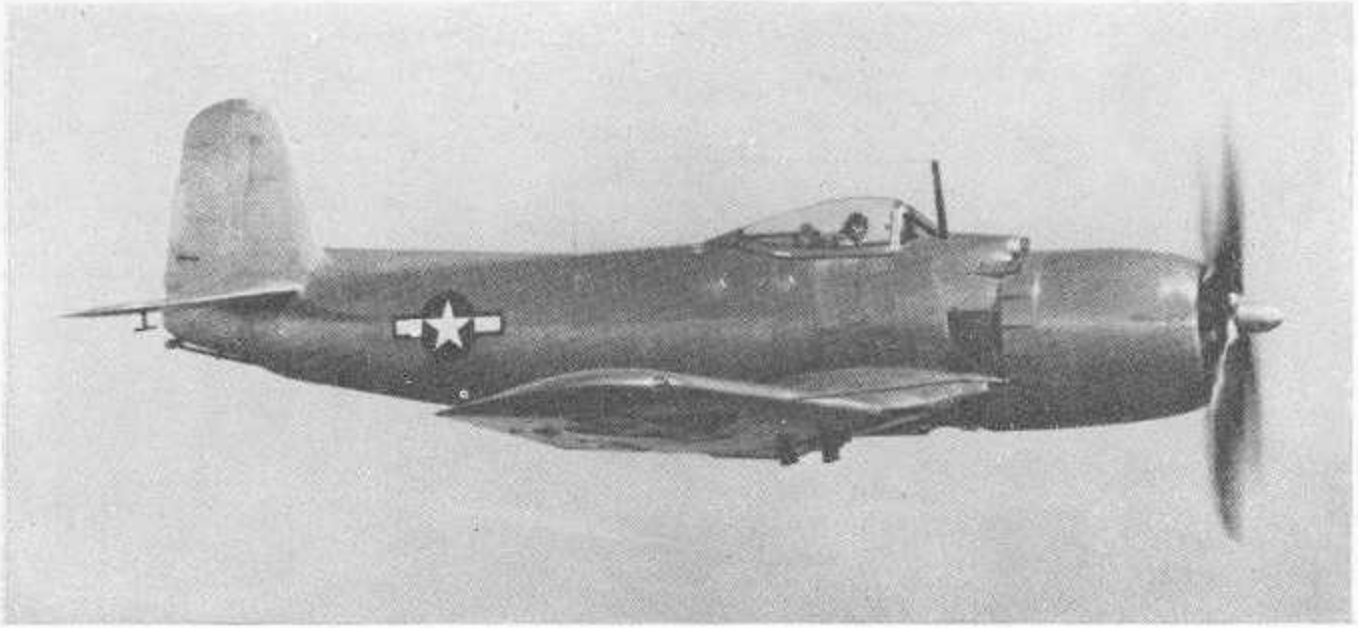
APRIL 1946 RESTRICTED

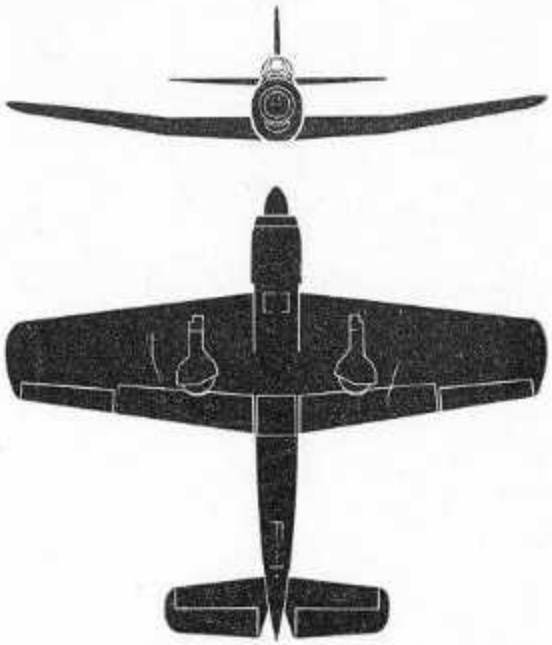


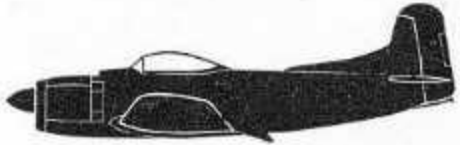


AM MAULER

U.S. NAVY
MARTIN







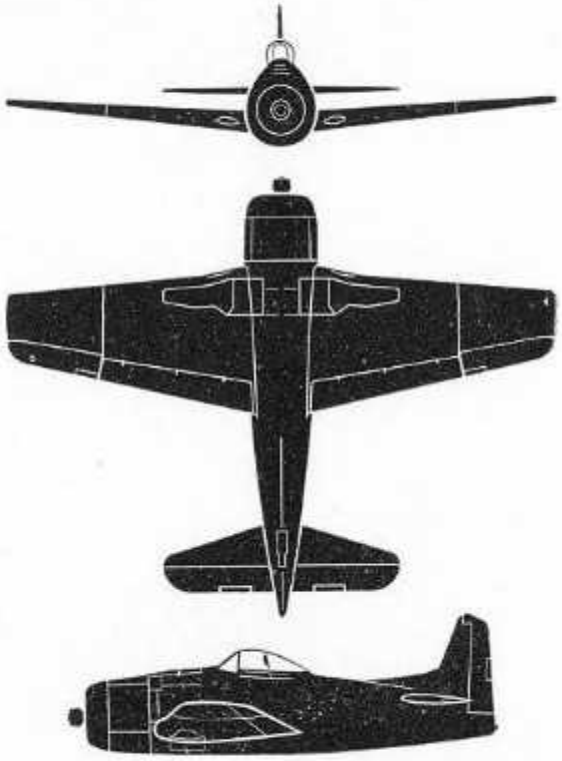
INFORMATION A single seat bomber torpedo plane, the Mauler is powered with a Pratt and Whitney 4360 Wasp Major engine developing 3,000 horsepower. Of very clean design the AM combines an all metal construction with bullet proof tanks, armor protection, and flak resisting glass. It can carry 4,000 lbs. of bombs and rockets and the load may include a torpedo slung externally. Note the upswept tail, bubble canopy, and airscoop just forward of the cockpit enclosure. The production model has the fairing between tail and fuselage as shown above.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
50′–0″	41′–9″	19,500	over 350		over 20,000	over 1,700

APRIL 1946 RESTRICTED

F8F BEARCAT

U.S. NAVY
GRUMMAN



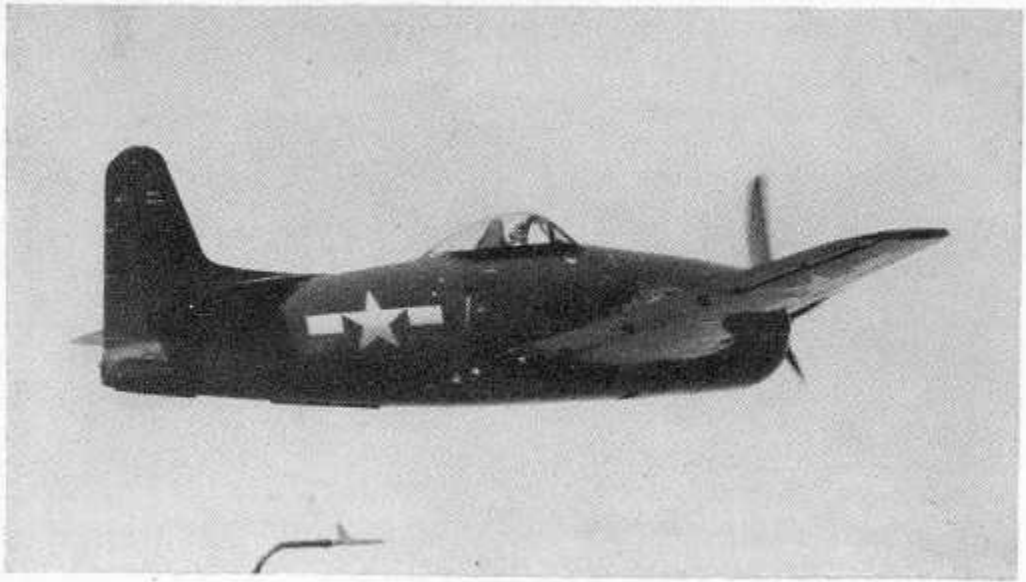
INFORMATION The evolution of the Grumman Fighter has produced this high speed, highly maneuverable interceptor. Powered with the same horsepower engine as its predecessor, the Hellcat, the Bearcat is lighter and of much cleaner design. It now joins the Corsair as the Navy's first line carrier-based fighter. The range listed is with a 150 gallon drop tank installed. Recognition features the familiar Grumman fuselage, bubble canopy, and over-all stubby appearance.

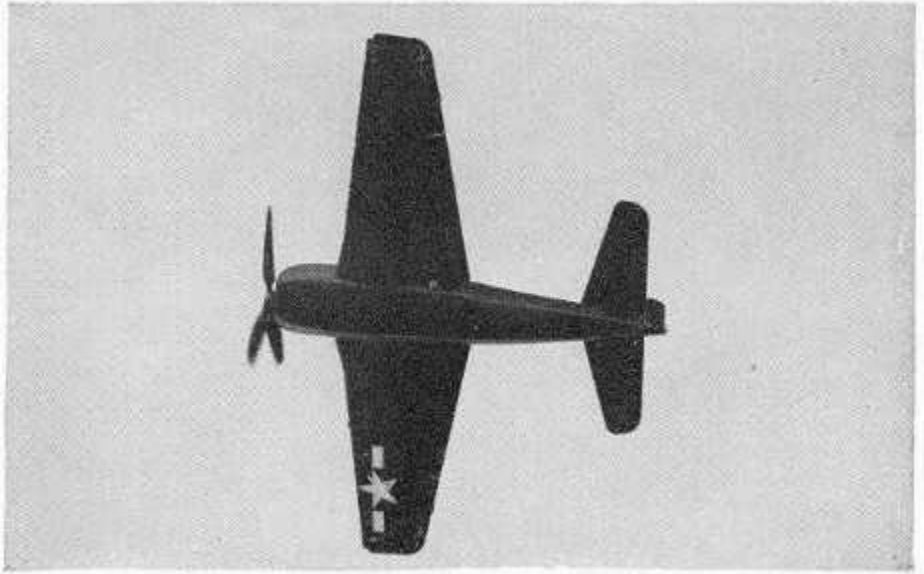
DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
35′–6″	27′–6″	9,400	over 400	over 4,000	over 35,000	1,100

APRIL 1946 RESTRICTED


1-40

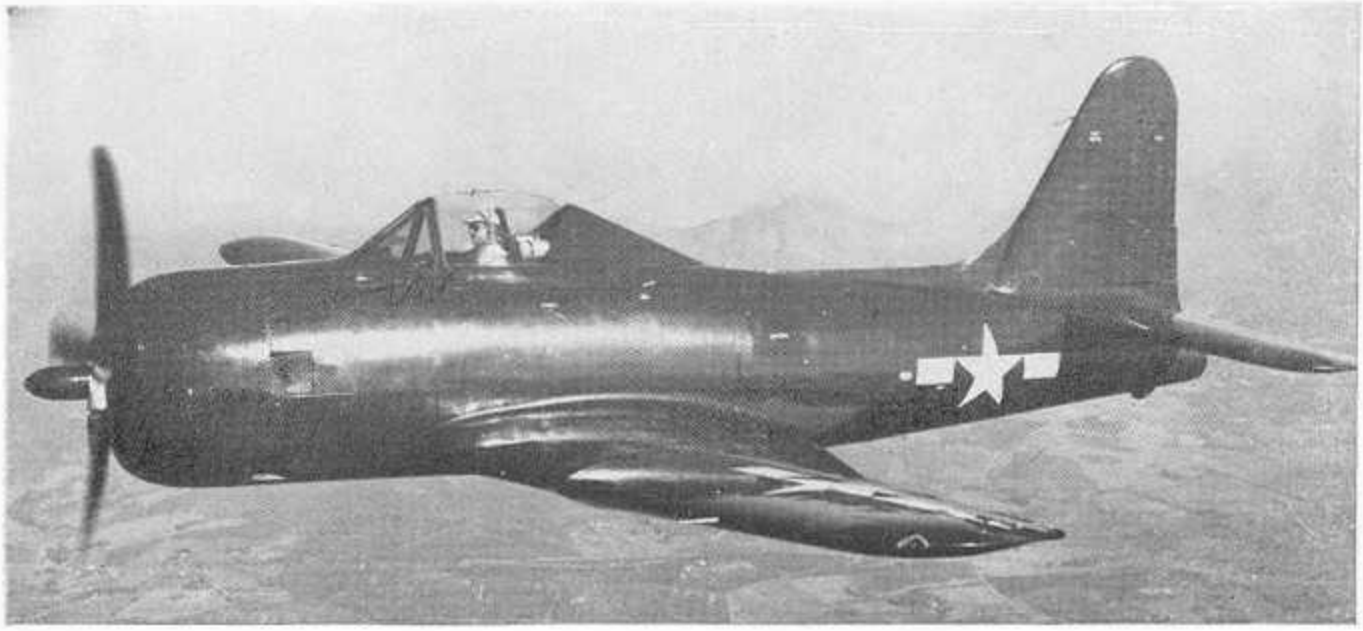

1-40

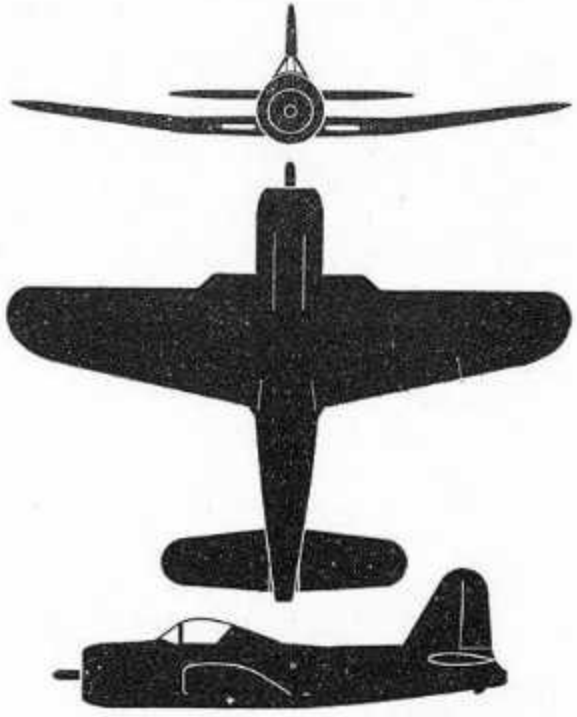




FR FIREBALL

U.S. NAVY
RYAN

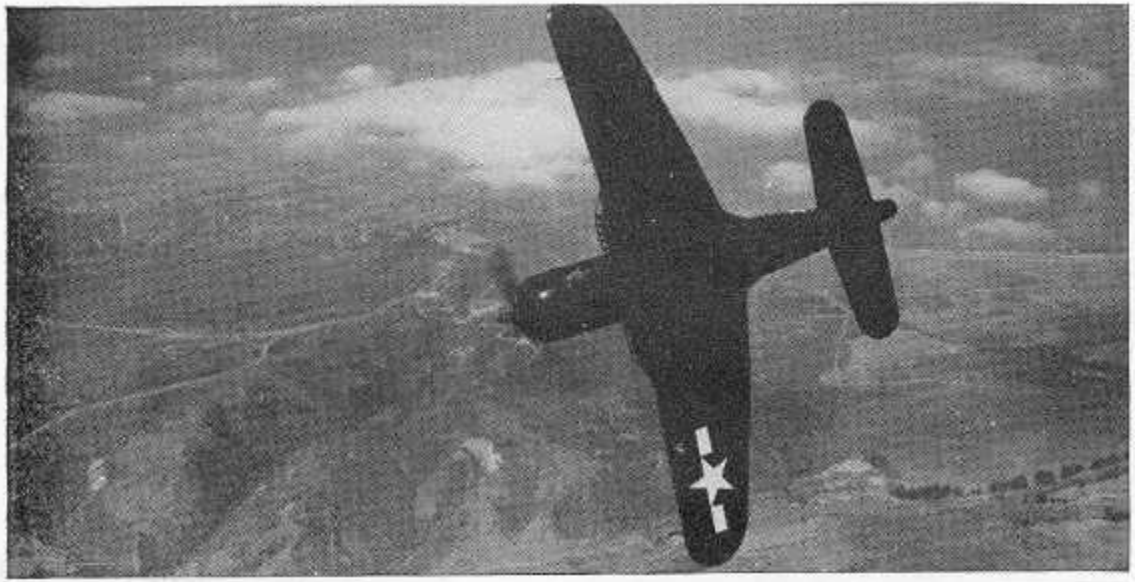


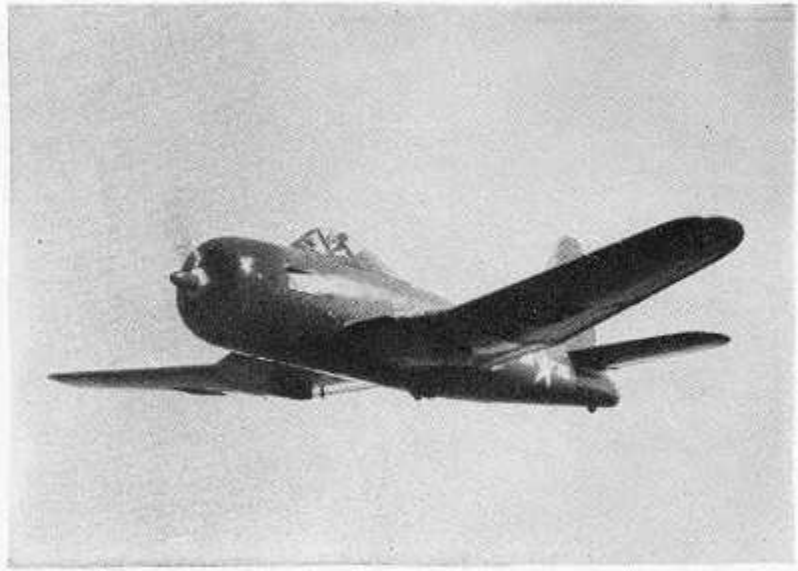


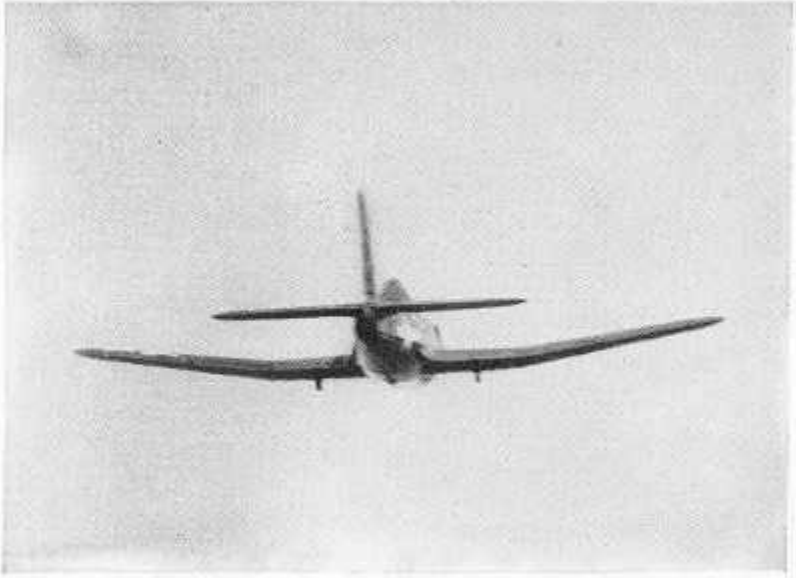
INFORMATION The Fireball is the Navy's first operational fighter combining the conventional power plant with jet propulsion. Designed to have the advantages of both, the FR is powered with a Wright 1820 engine and an I-16 jet unit. Its armament is 4-.50 caliber fixed machine guns, and racks to carry bombs and rockets. Recognition features are the raised cockpit enclosure, tricycle landing gear, and irregularity of the leading edge of the wing at the roots, built to house the air scoops.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
40'-0"	32'-1"	9,900	over 400	over 4,000	over 35,000	1,500

APRIL 1946 **RESTRICTED**







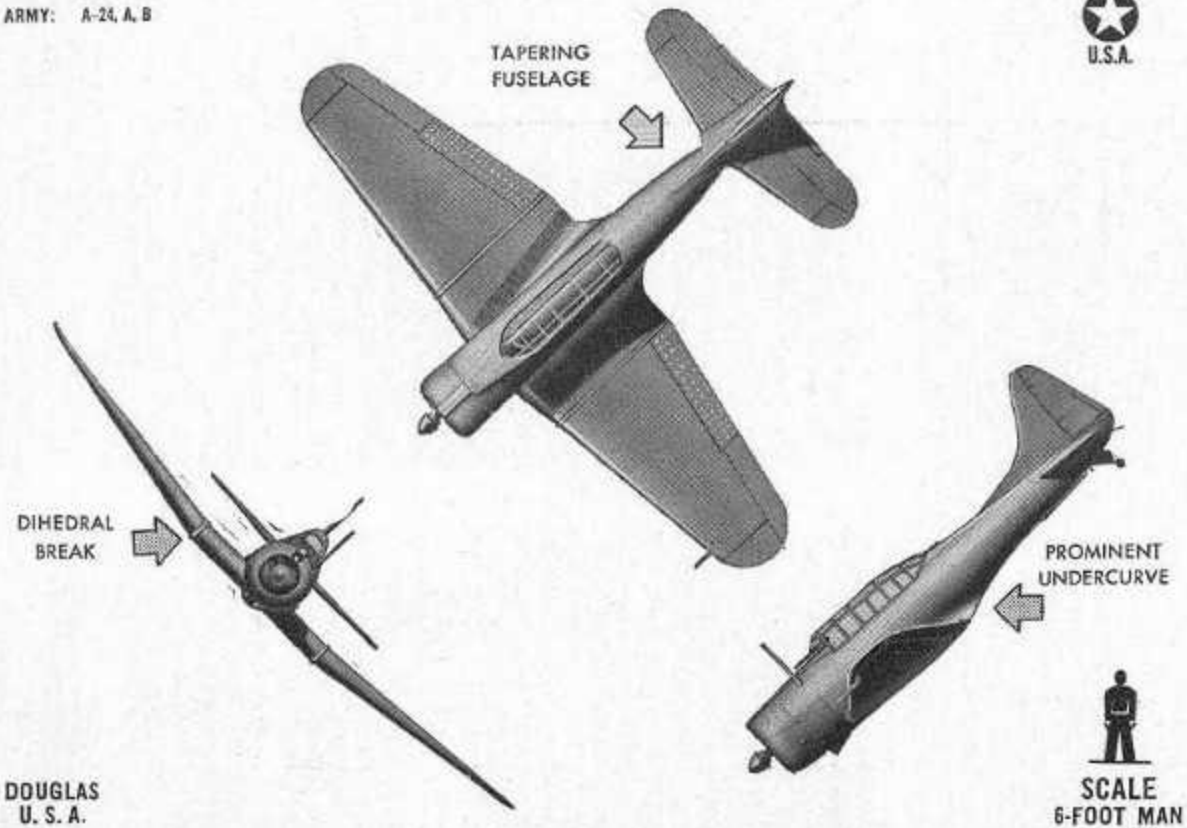
NAVY: SBD-3, 4, 5
SBD series

ARMY: A-24, A, B

DIVE BOMBER

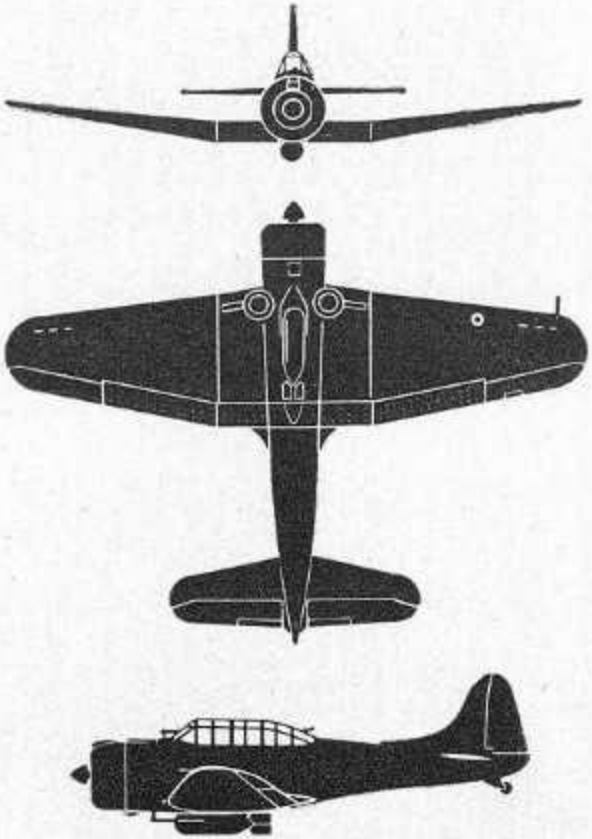
U.S.A.

SBD "DAUNTLESS"



DOUGLAS
U. S. A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Low-wing monoplane with single radial engine. Wings with equally tapered leading and trailing edges, rounded tips, and dihedral on outer panels. Trailing edge of wing fairs gracefully into tapering fuselage. High single fin and rudder faired forward into fuselage.

INTEREST: This excellent dive bomber is one of the longest lived of all combat aircraft. It has seen much action from carriers of the U. S. Navy in the Pacific, notably in the Coral Sea Battle and at Midway. Long considered to be the finest carrier-based dive bomber in the world, it is now excelled in some respects by the more recently developed Helldiver. As the A-24, the Dauntless is the first dive bomber to be used in quantity by the U. S. Army in support of ground troops. A 1,000-pound bomb is carried in a cradle under center section. Bomb racks are also fitted under the wing roots.

SPAN: 41 ft. 6 in.
LENGTH: 33 ft.
APPROX. MAX. SPEED. 245 m. p. h.

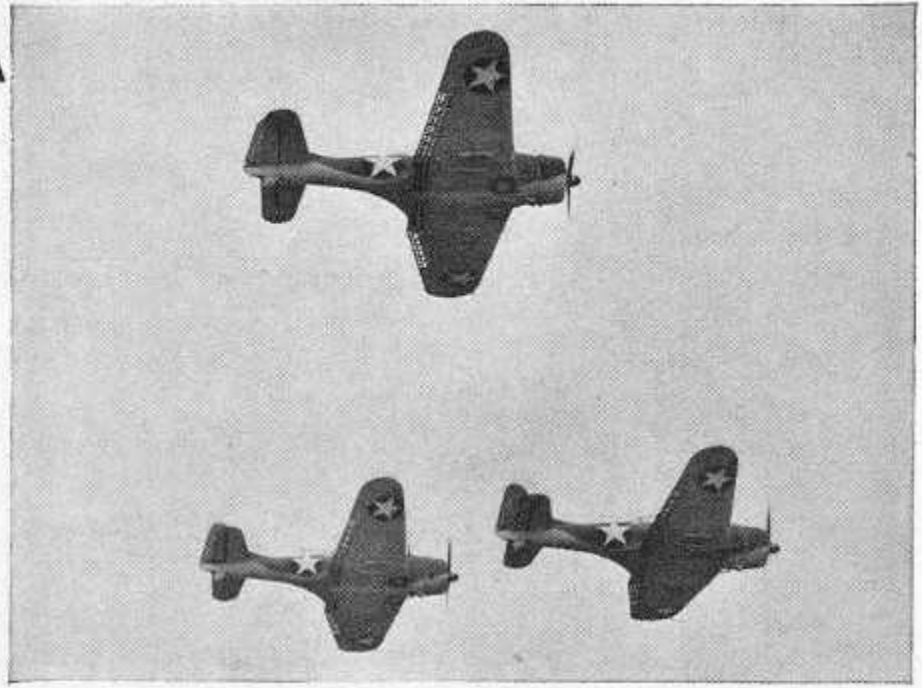
SERVICE CEILING:
25,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

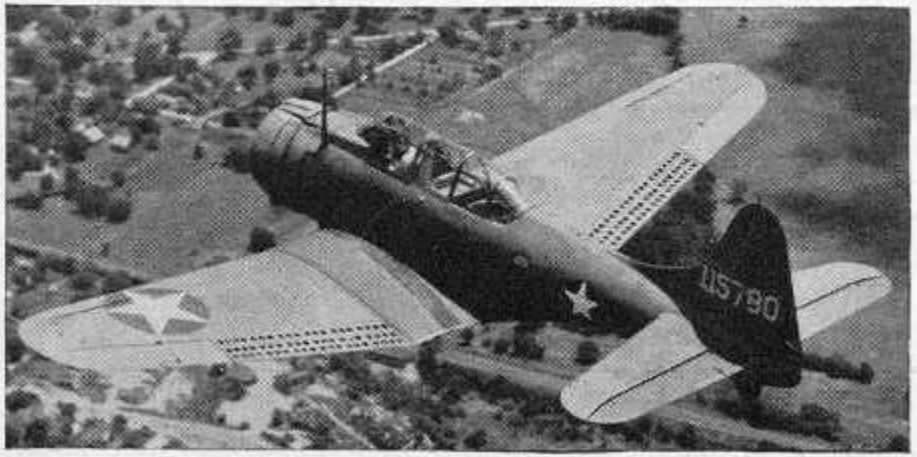
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

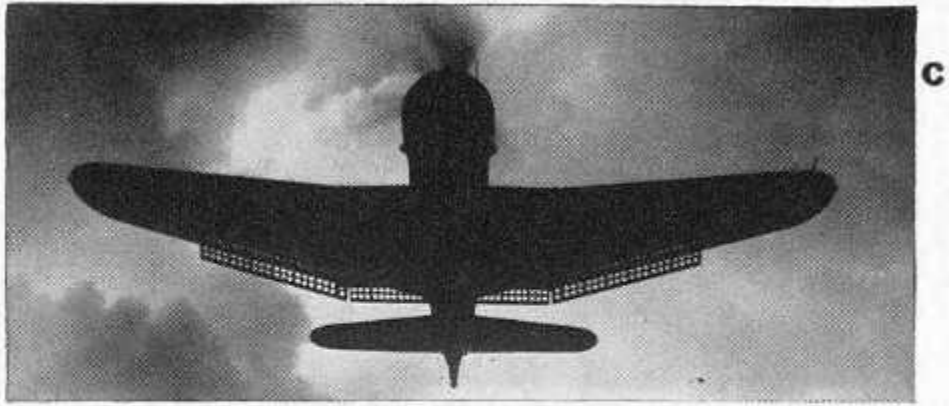
A



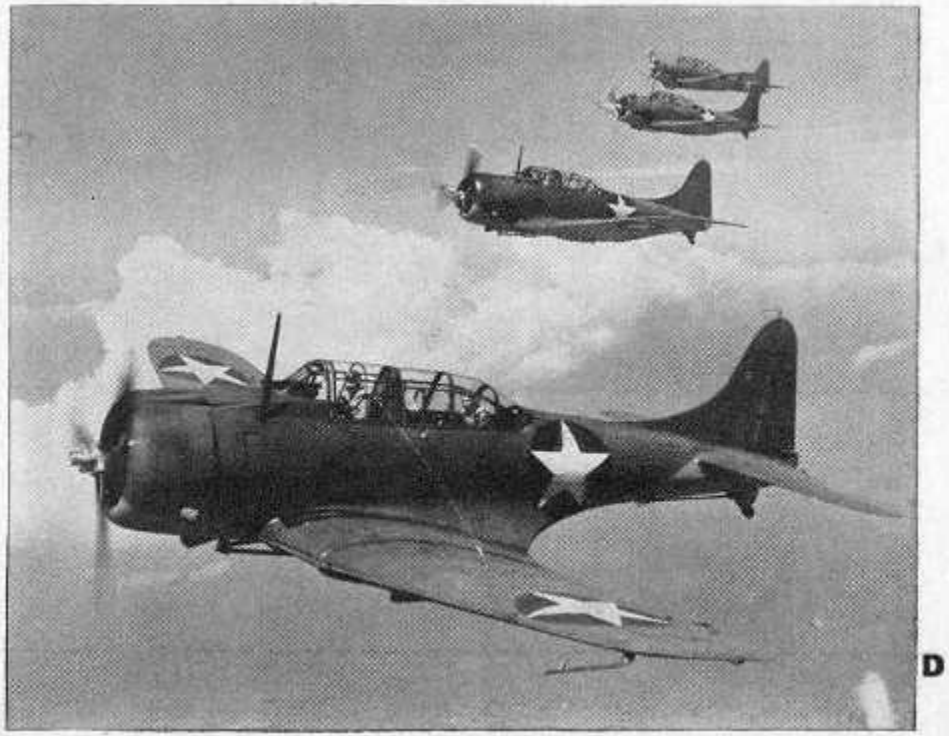
B



C



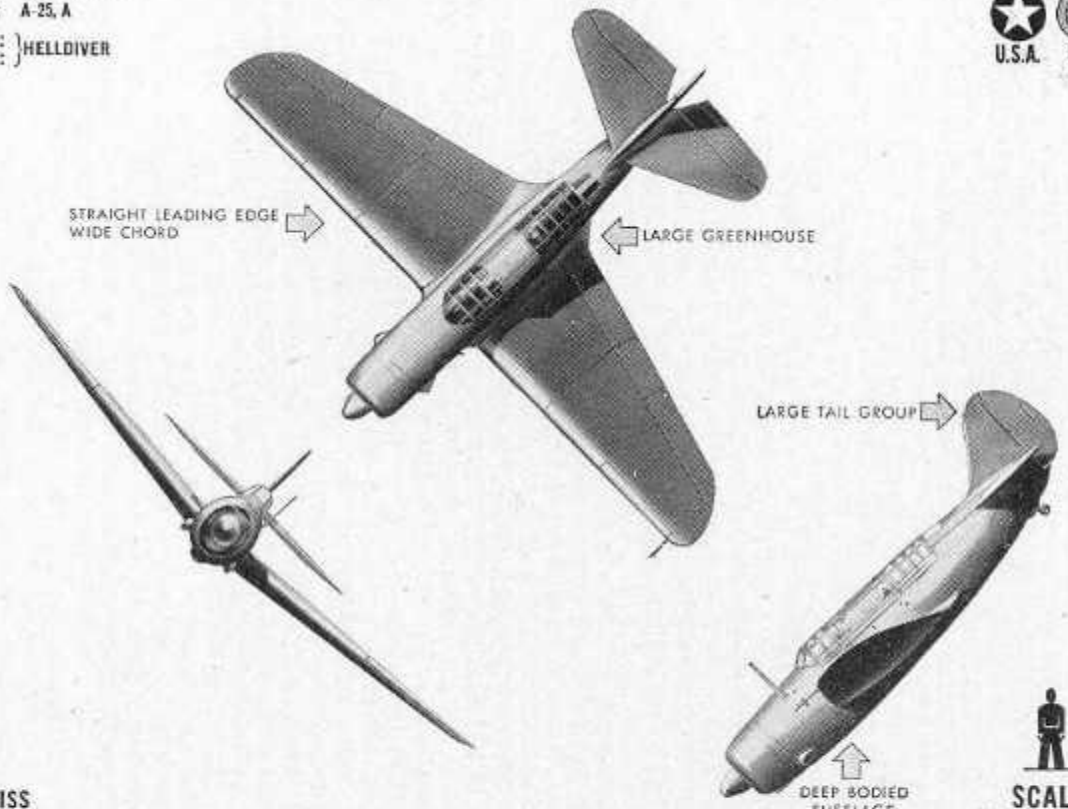
D



SB2C "HELLDIVER"

NAVY: SB2C-1, 2
SBW-1; SBF-1
ARMY: A-25, A
F. A. A.: } HELLDIVER
R. A. F.: }

DIVE BOMBER
U.S.A. U.K.



SCALE
6-FOOT MAN

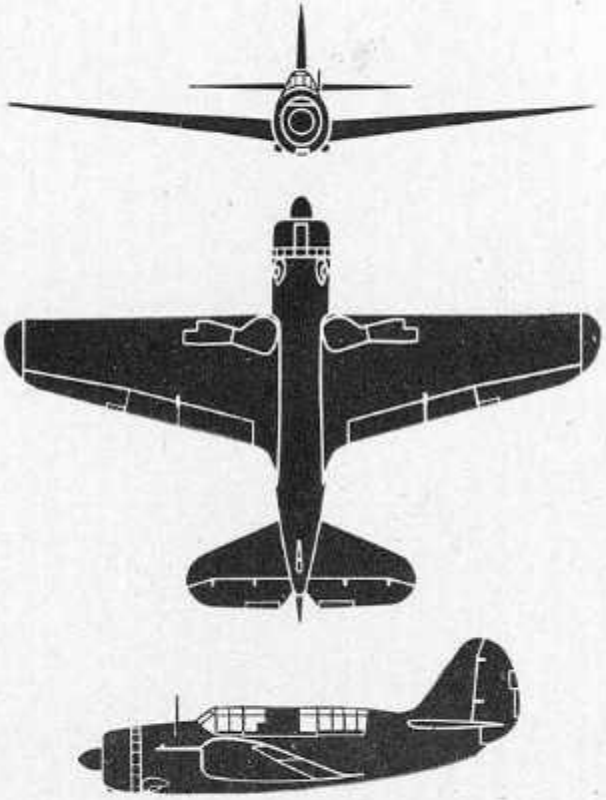
CURTISS
U. S. A.

DISTINGUISHING FEATURES: Single radial engine low mid-wing monoplane. Wings have full dihedral. The leading edge is straight with a sharply tapered trailing edge fairing into fuselage. Large blunt nose with large spinner. Long cockpit enclosure extends aft nearly to high broad fin and rudder. The fin has pronounced taper. Large rounded rudder. The tail plane is mounted high with a V cut-out between the elevators.

INTEREST: One of the largest operational single engine aircraft, the Helldiver was designed to carry torpedoes, depth charges, or large bombs. It can be operated either from carriers or from land bases. It is faster, and probably carries larger bomb loads than the German "Stuka." Some models of this aircraft will appear with twin floats. From all indications, the SB2C will become one of the world's deadliest dive bombers.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3



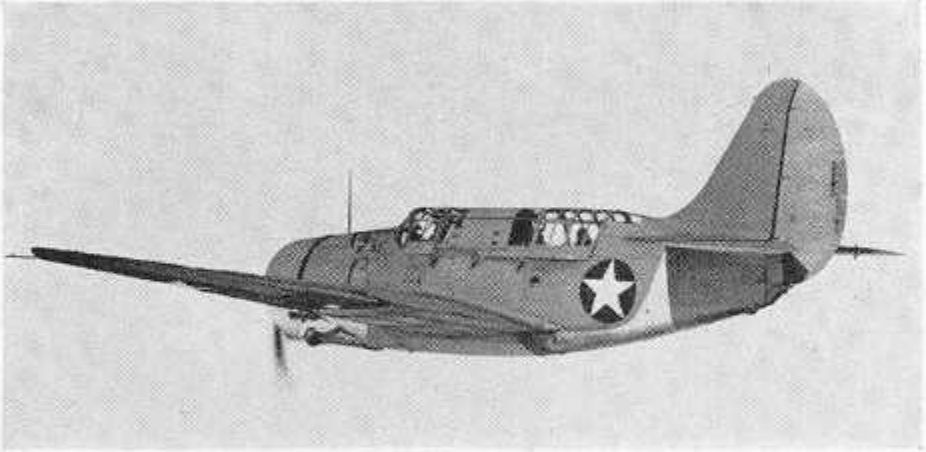
SPAN: 49 ft. 9 in.
LENGTH: 36 ft. 8 in.
APPROX. MAX. SPEED: over 300 m. p. h.
SERVICE CEILING: over 25,000 ft.

RESTRICTED

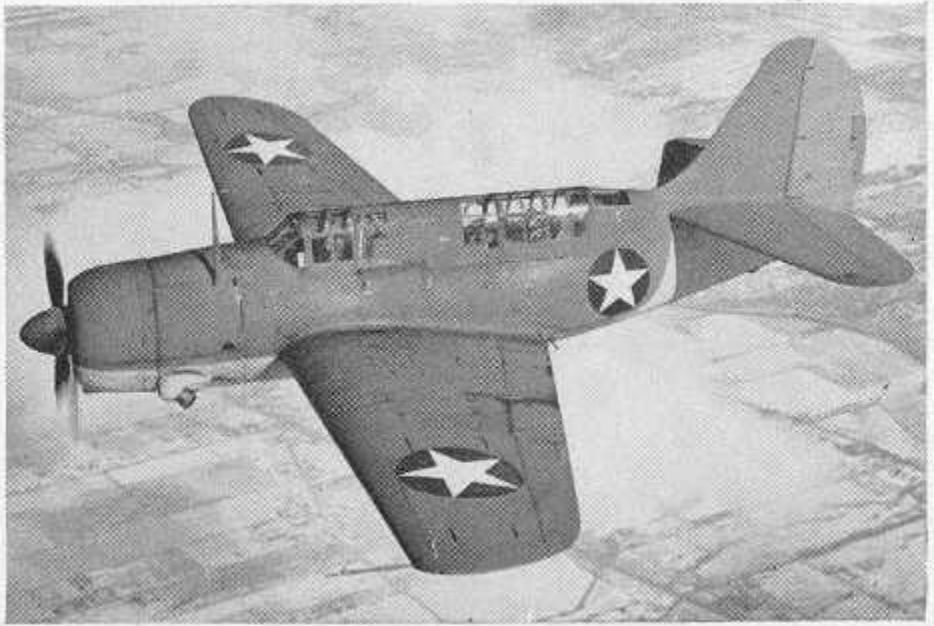
A

B

C



D

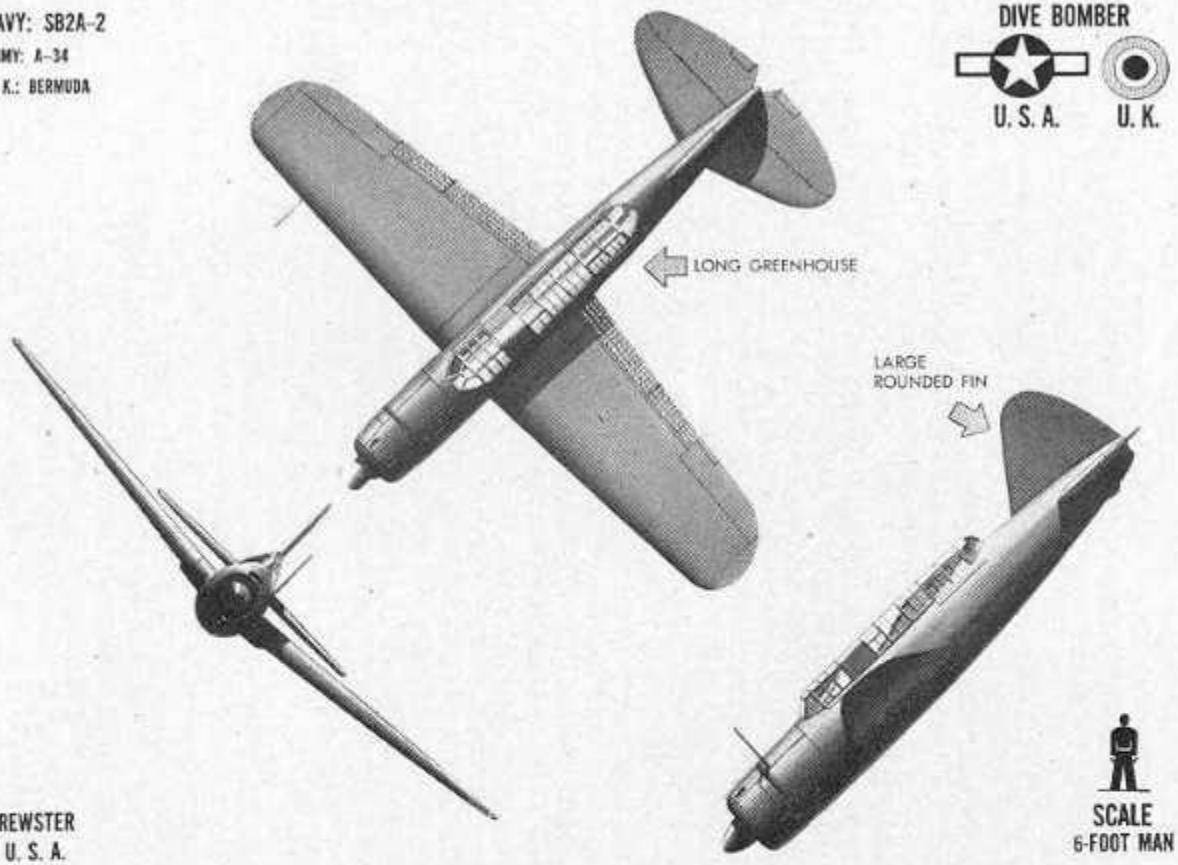


NAVY: SB2A-2
ARMY: A-34
U. K.: BERMUDA

DIVE BOMBER

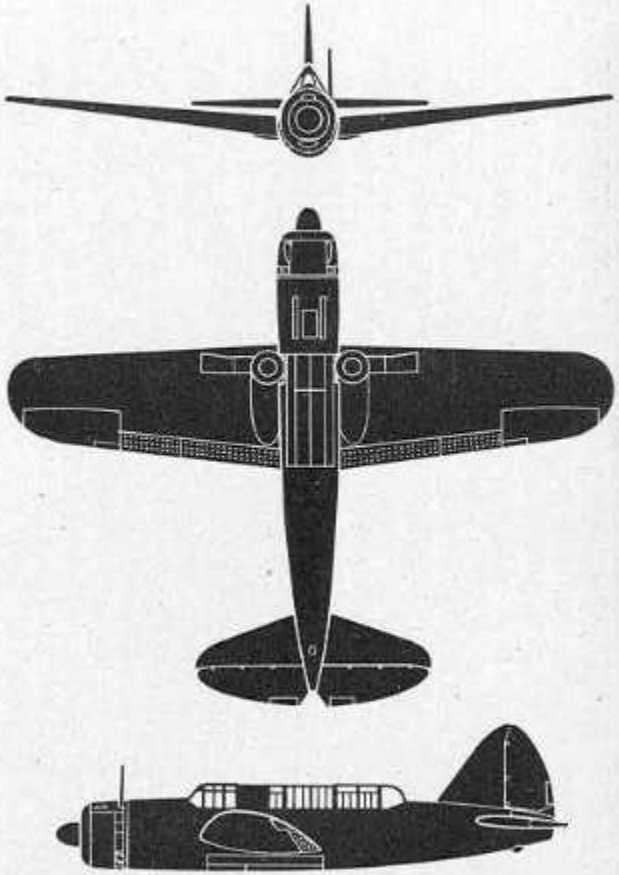
U. S. A. U. K.

BUCCANEER SB2A



BREWSTER
U. S. A.

SCALE
6-FOOT MAN



SPAN: 47 ft.
LENGTH: 39 ft. 2 in.
MAX. SPEED: 274 m. p. h. at 12,000 ft.
SERVICE CEILING: 24,900 ft.

DISTINGUISHING FEATURES: Single radial engine mid-wing monoplane. Wing slightly tapered with more taper on trailing edge and broad rounded tips. Long, oval fuselage with large, unfaired greenhouse extending nearly to the fin. Triangular-shaped fin and rudder has tapered leading edge, curved trailing edge with V cut-out in center and rounded tips.

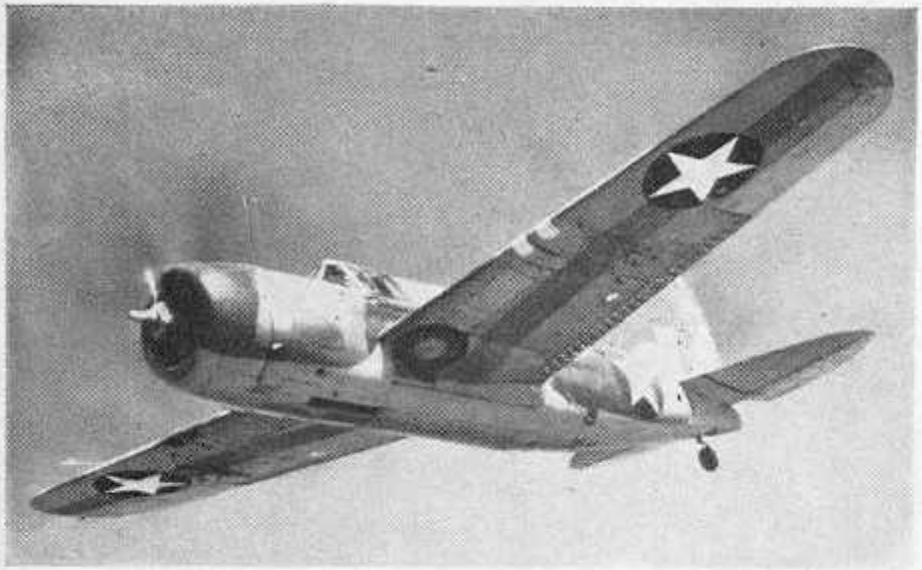
INTEREST: This Brewster-made dive bomber has been nicknamed the "Bermuda" by the British. Although this plane has not been used extensively in actual combat, it is used by both the U. S. Navy and the British Fleet Air Arm as an advanced dive-bomber trainer.

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

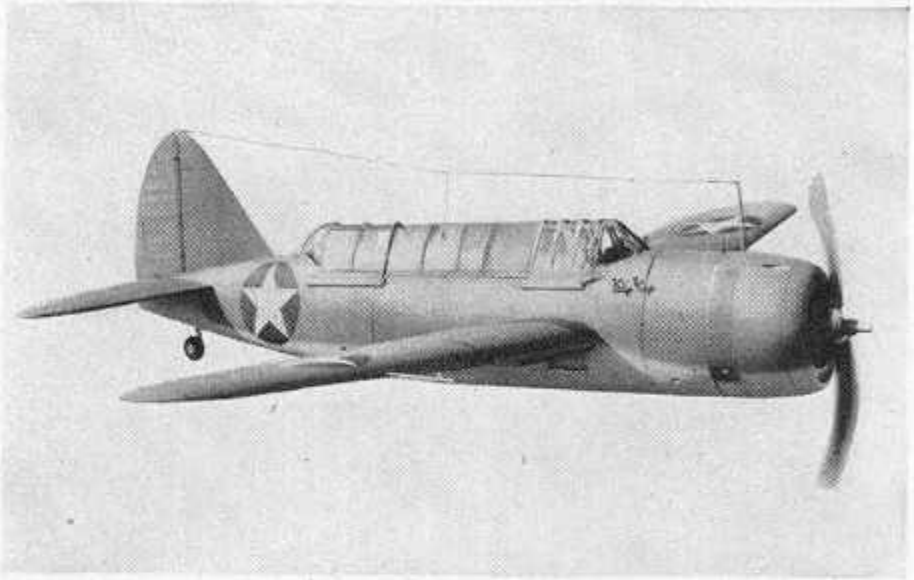
SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

RESTRICTED

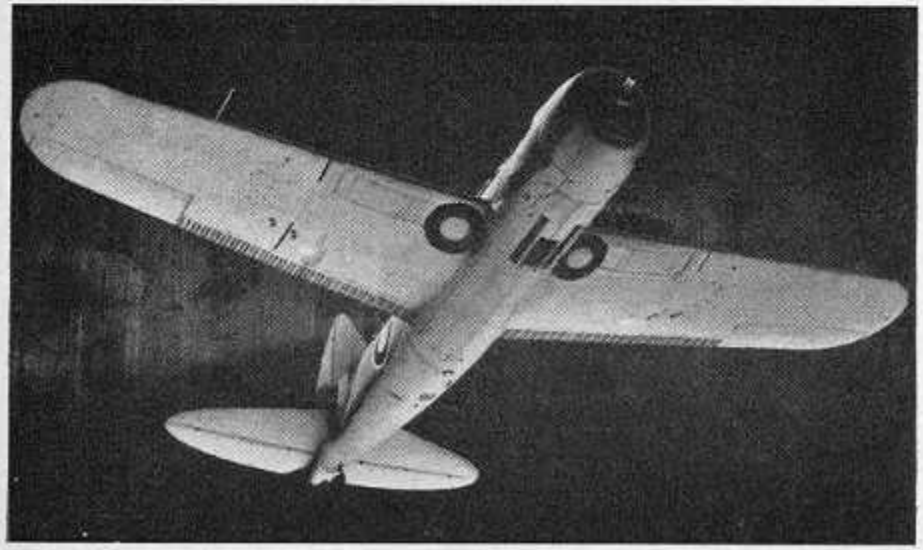
A



C



B



D

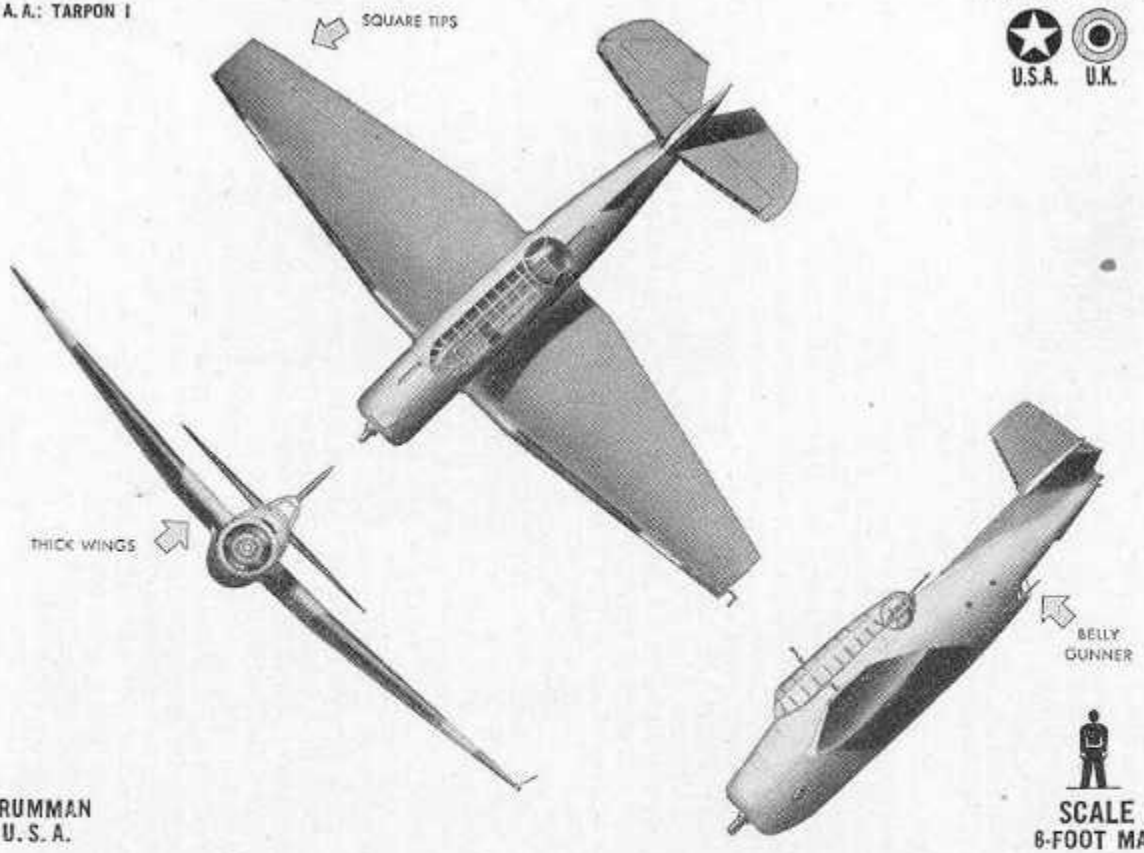
NAVY: TBF-1

F. A. A.: TARPON I

TORPEDO BOMBER

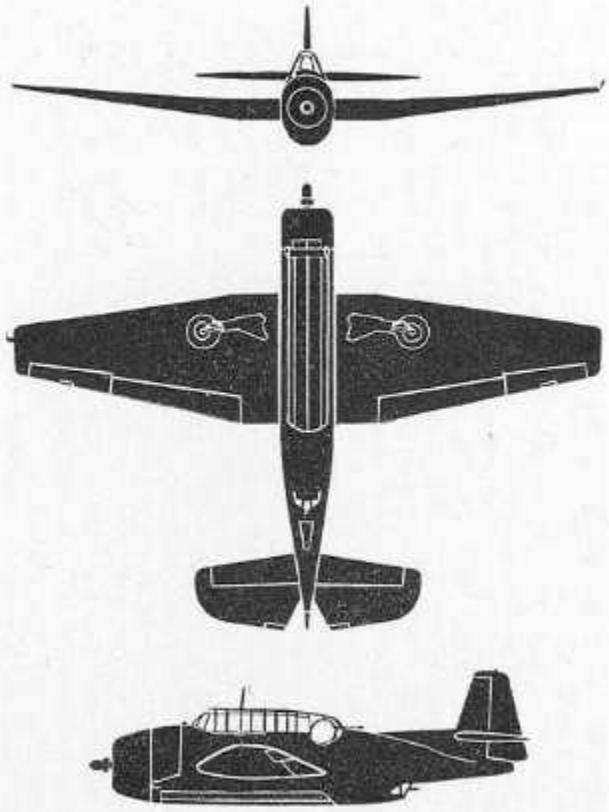
U.S.A. U.K.

TBF "AVENGER"



GRUMMAN
U. S. A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Mid-wing monoplane with single radial engine. Fuselage is short and heavy with break on underside aft of torpedo housing. Wing has sharp taper in outer panels with square cut tips and dihedral on outer panels. Large cockpit enclosure mounted on top of fuselage with bubble turret aft forming part of it. Stabilizer and elevator are set above fuselage and have taper on both edges with nearly square tips. Fin and rudder are high and angular.

INTEREST: The Avenger is probably the best carrier-based torpedo plane so far seen in action. It first gained wide publicity in the Battle of Midway. Probably the most versatile of all torpedo bombers, the TBF has been used as bomber, scout, and for subpatrol from land bases. The deep fuselage permits it to carry a 21″ torpedo or approximately 2000 pounds of bombs internally.

SPAN: 54 ft. 2 in.
LENGTH: 41 ft.
APPROX. MAX. SPEED: 270 m. p. h.

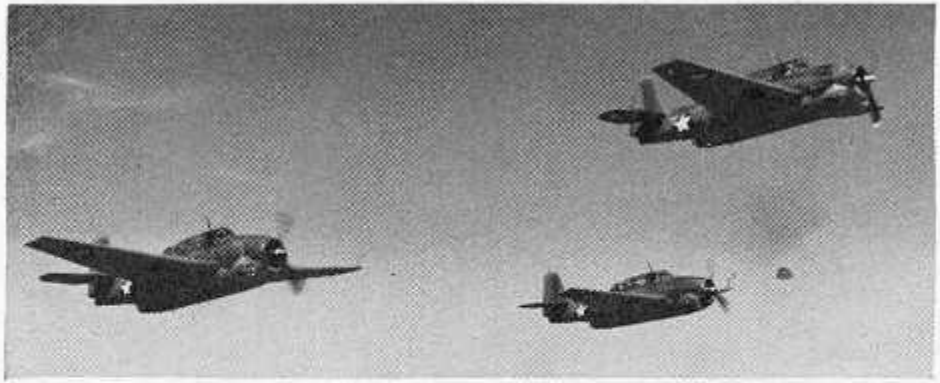
SERVICE CEILING:
22,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

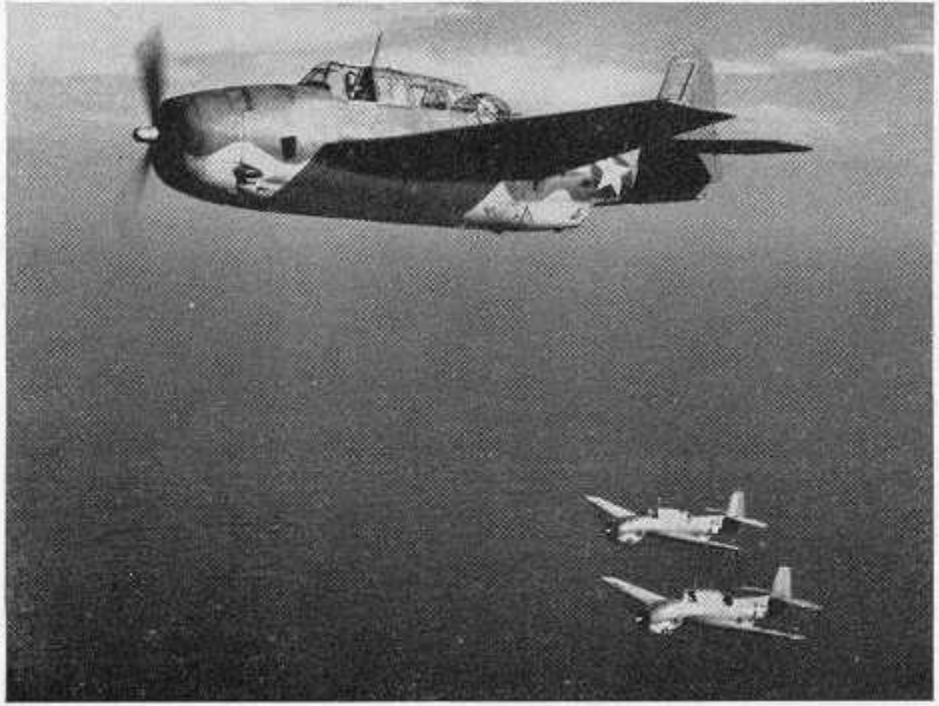
RESTRICTED

A

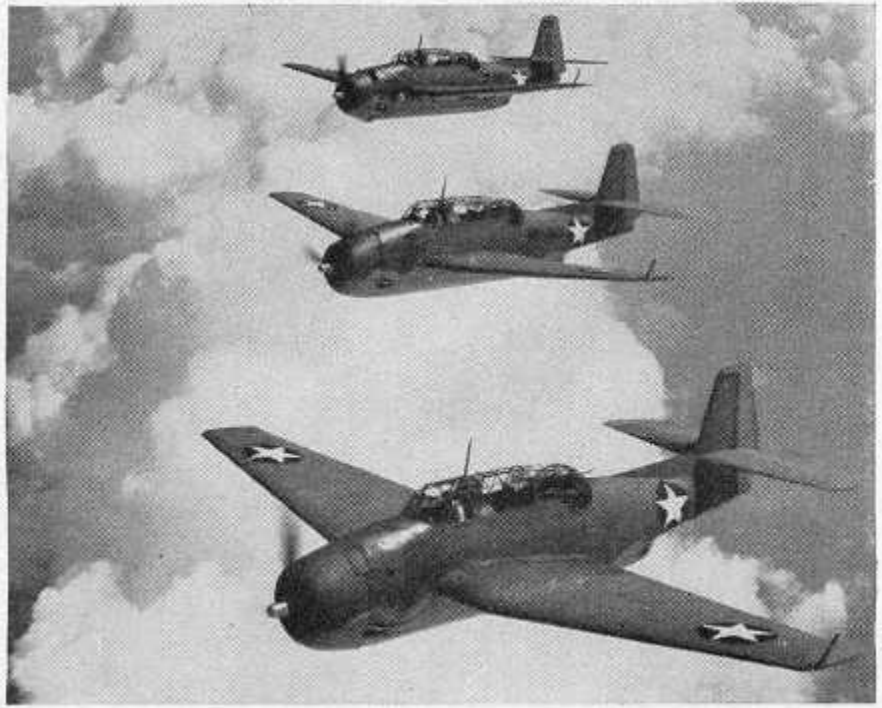


C

B



D



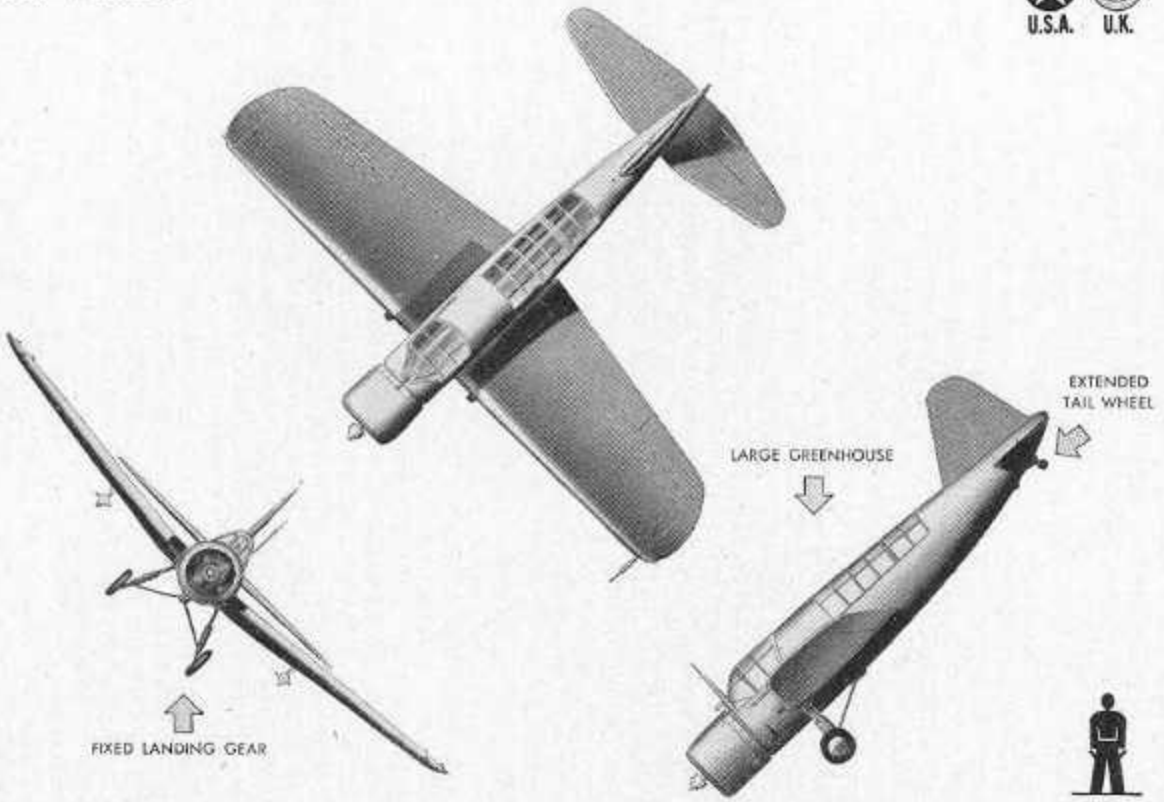
NAVY: OS2U-3
OS2U-1, 2, 3; OS2N

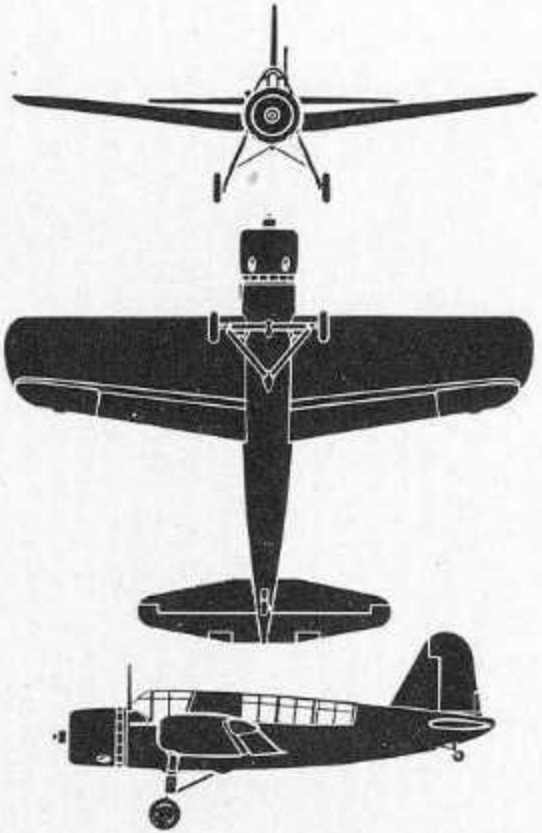
F. A. A.: KINGFISHER I

RECONNAISSANCE

U.S.A. U.K.

OS2U "KINGFISHER"





CHANCE VOUGHT
U. S. A.

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Low mid-wing monoplane with straight leading edge and tapered trailing edge. Long high cockpit enclosure extending nearly to the tail. Bottom line is broken by a fixed landing gear or floats. Tall triangular fin and rudder.

INTEREST: Known as "The eyes of the Navy", the principal function of the Kingfisher is to spot gunfire for the fleet. Some versions are equipped with wheels for scouting operations from land bases. Fitted with a single float, the Kingfisher is designed for catapulting from battleships or cruisers.

SPAN: 36 ft.
LENGTH: 33 ft. 10 in. as seaplane
30 ft. 1 in. as landplane
APPROX. MAX. SPEED: 175 m. p. h.

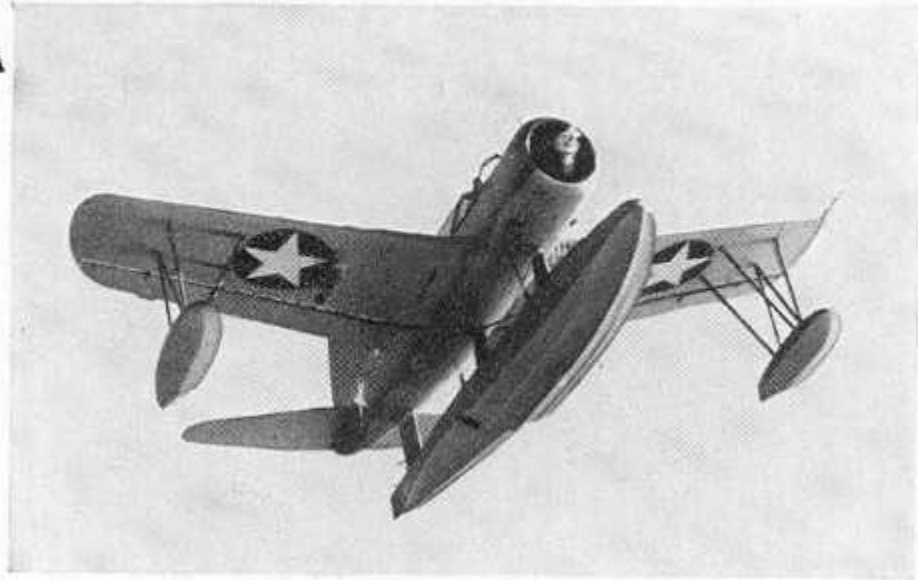
SERVICE CEILING:
about 12,000 ft.

RESTRICTED

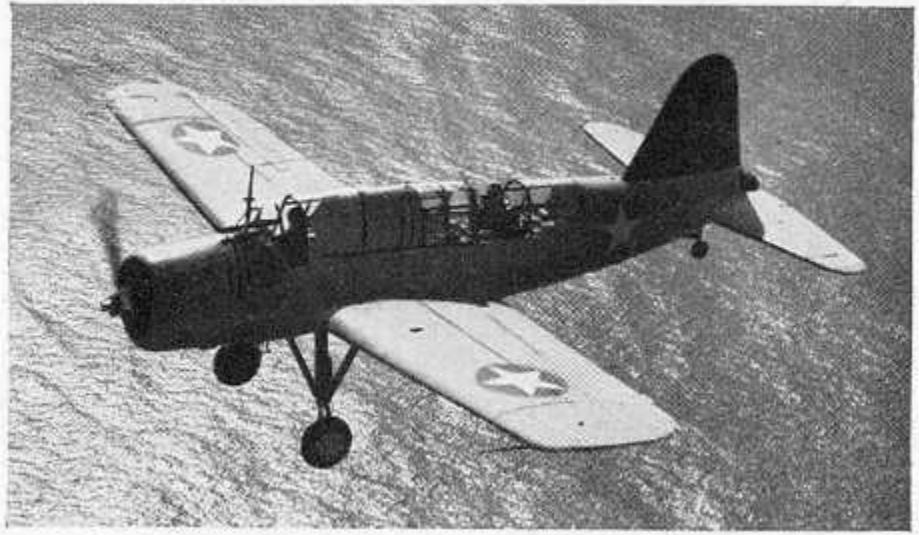
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 9

A



C



B

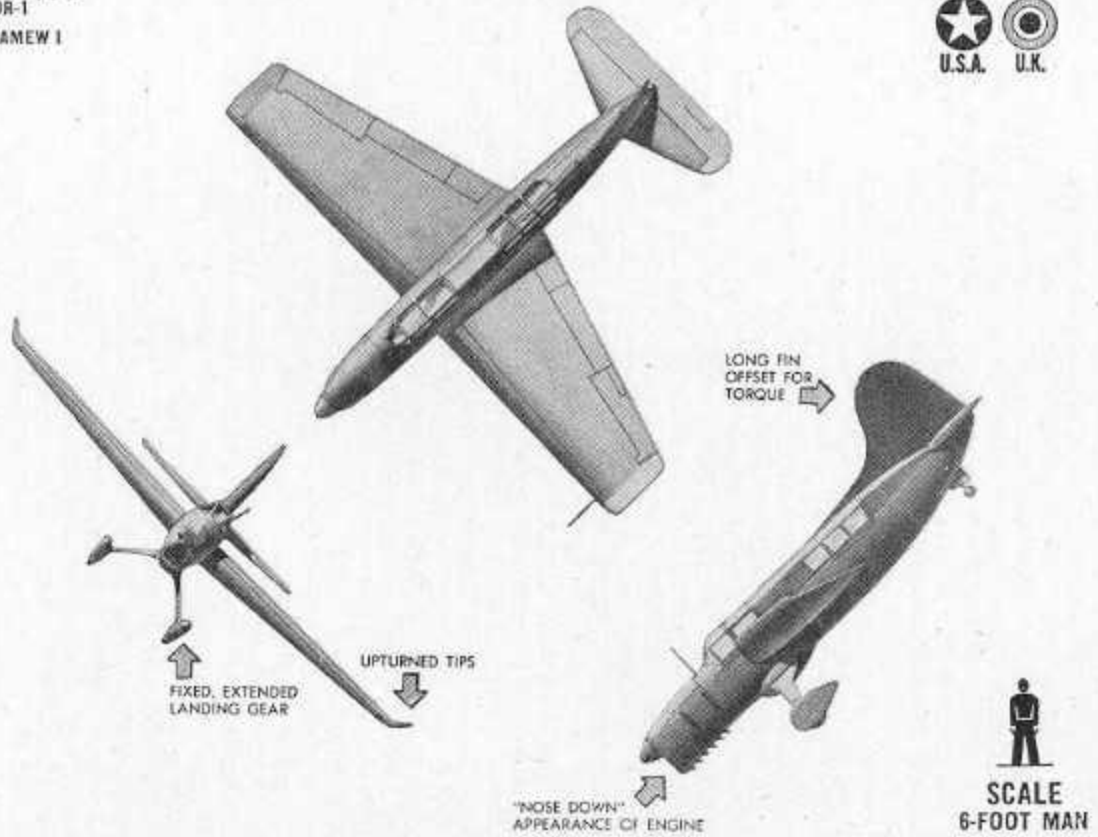
D

NAVY: SO3C-2
SO3C-1, 2, 3, 4
SOR-1

F.A.A.: SEAMEW I

RECONNAISSANCE

U.S.A. U.K.



SCALE
6-FOOT MAN

CURTISS
U. S. A.

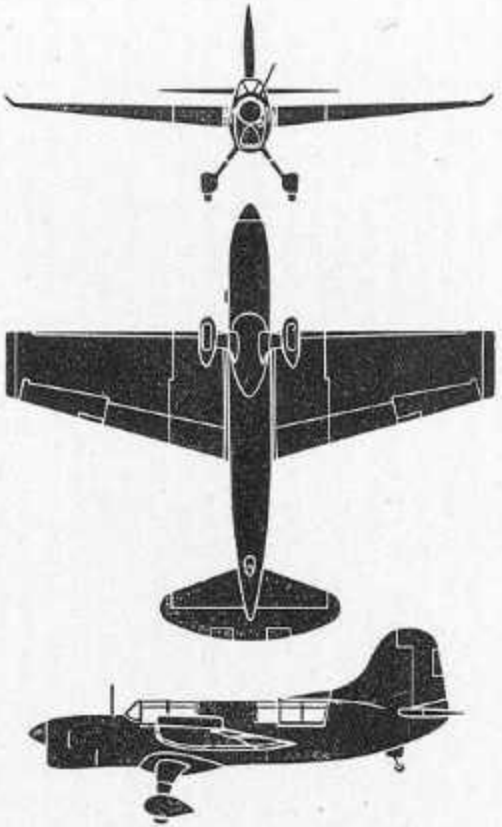
DISTINGUISHING FEATURES: Single-engine mid-wing monoplane. Fixed landing gear or single large float with fixed wing floats. In-line engine and large spinner. Slightly dihedral wings which have straight leading edge and tapered trailing edge. Wing tips square and turned up. Long high cockpit enclosure. Large fin and rudder.

INTEREST: One of the newest battleship and cruiser based airplanes in service, the Seagull is designed for operation as gun spotter for the fleet. It can also be used for anti-submarine patrol on the coast. An interesting feature of the Seagull is that it is powered by an in-line engine which is air-cooled. Equipped for catapult launching, the Seagull can be easily landed in rough waters and is known for its long range. Some versions with fixed landing gear, can be used on carriers. Seagulls now being added to the British Fleet Air Arm are to be known as "Seamews."

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

SO3C "SEAGULL"

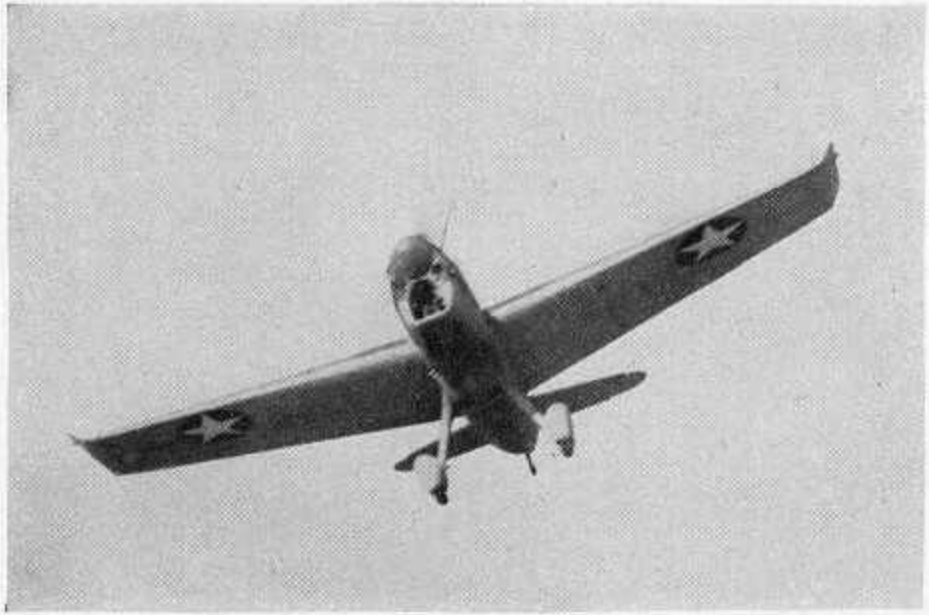


SPAN: 38 ft.
LENGTH: 34 ft.
APPROX. MAX. SPEED: 180 m. p. h.

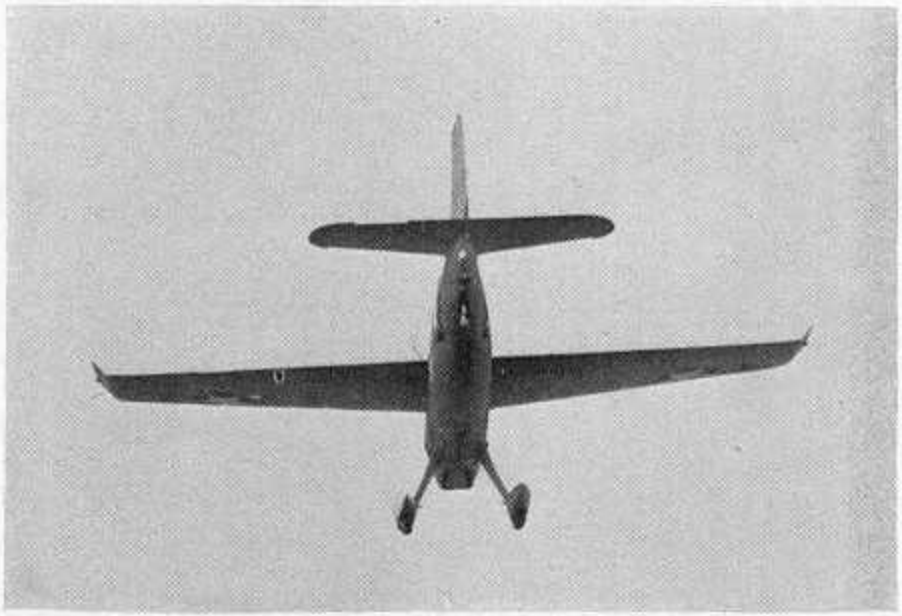
SERVICE CEILING:
18,000 ft.

RESTRICTED

A



C



B

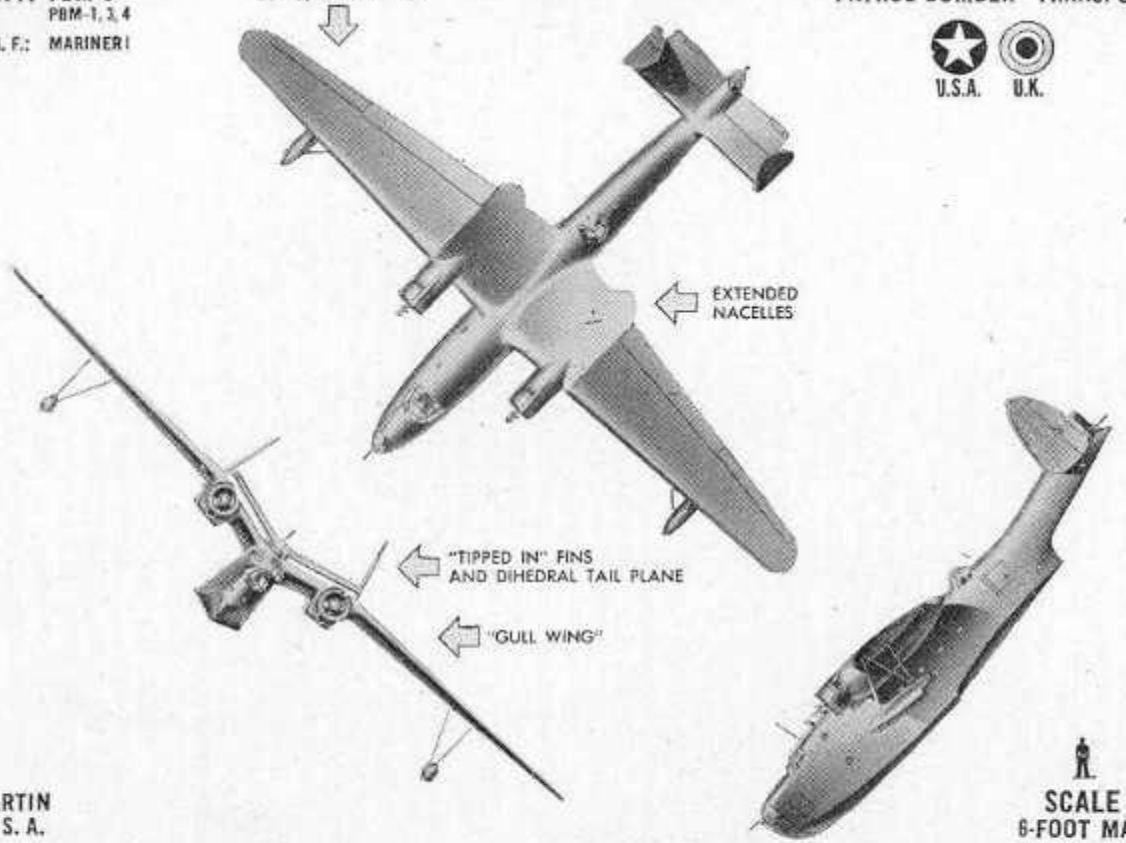
D

PBM "MARINER"

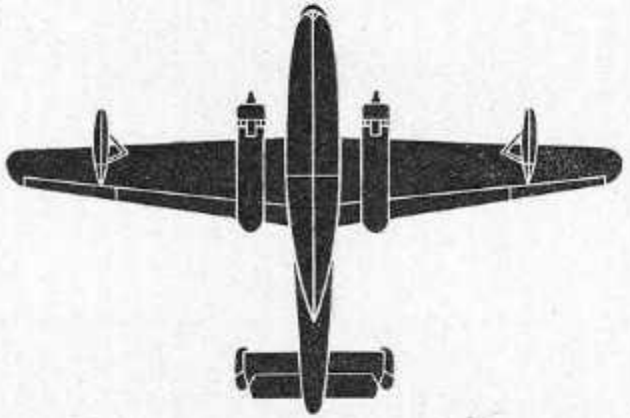
NAVY: PBM-3
PBM-1, 3, 4
R. A. F.: MARINER I

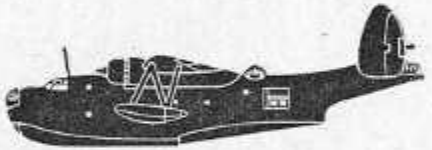
PATROL BOMBER—TRANSPORT

U.S.A. U.K.



SCALE
6-FOOT MAN





MARTIN
U. S. A.

DISTINGUISHING FEATURES: High gull-wing monoplane with twin radial engines. Wings tapered on trailing edge with small rounded tips. Twin toed-in triangular fin and rudders set outboard of dihedral tail plane. Hull tapers back toward tail with sharp step on underside.

INTEREST: The Mariner is an extremely serviceable long-range flying boat. It has been giving excellent results over rough seas and under otherwise strenuous operating conditions. This aircraft was first designed, built, and flown in miniature. Two torpedoes or equivalent weight in bombs are carried under the wings inboard of the engines. On the PBM-3, fixed wing floats have replaced the retractable floats of the two previous models. At present, some Mariners are being used for over-water transport airplanes. These converted airplanes, with armament removed, will be designated as PBM-3R's. The latest model (not here shown) has 3 power-driven turrets and is called the PBM-3C.

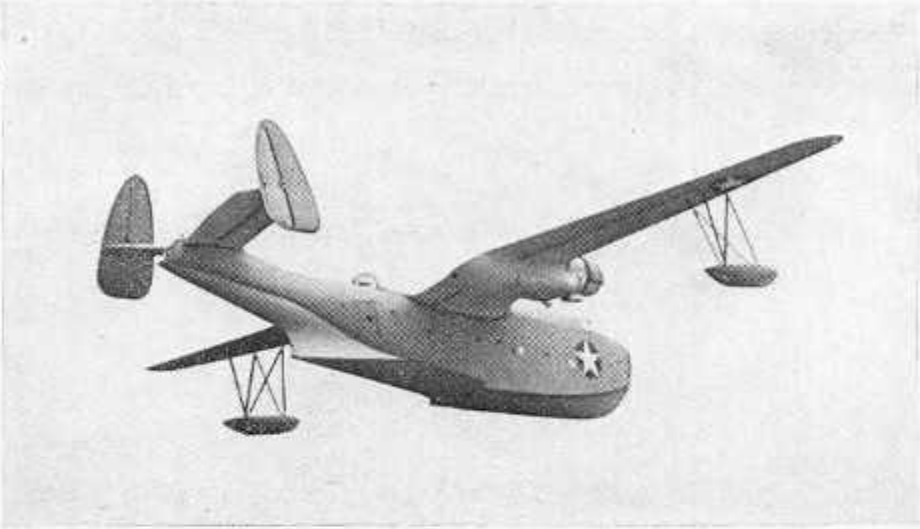
SPAN: 118 ft.
LENGTH: 80 ft.
APPROX. MAX. SPEED: 205 m. p. h.
SERVICE CEILING: 17,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

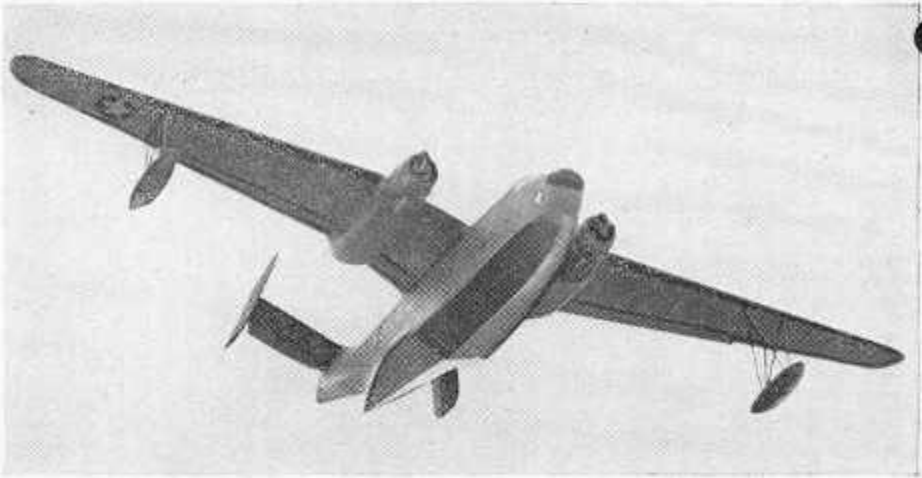
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

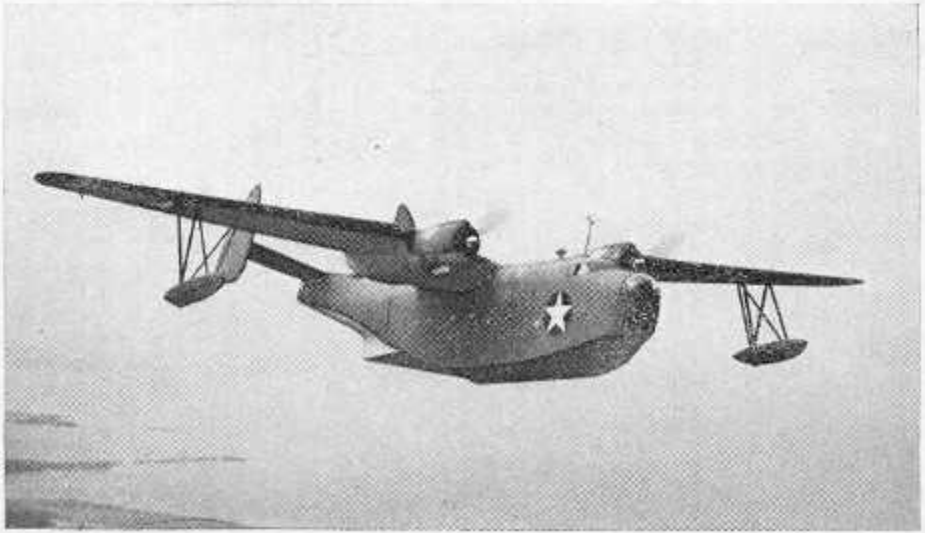
A



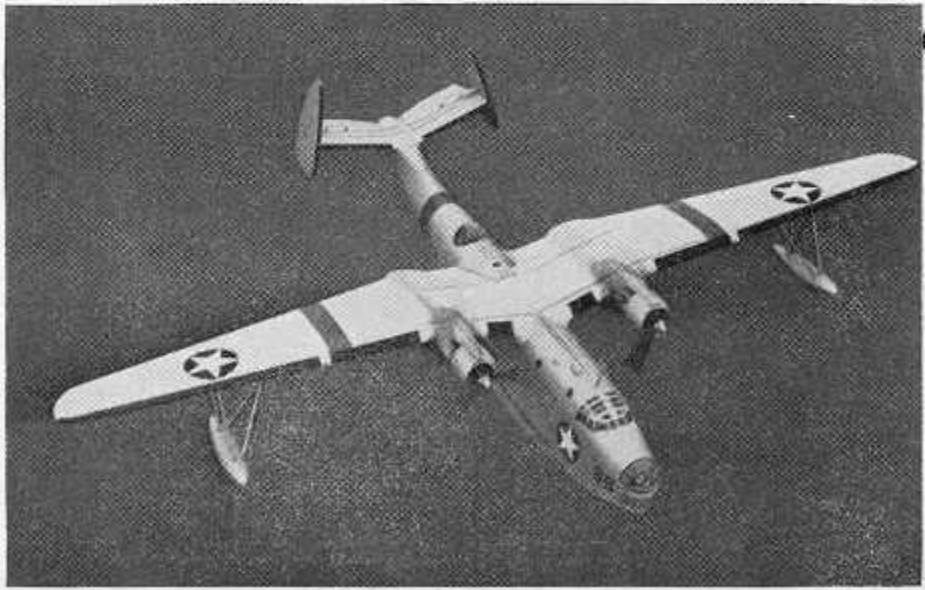
C



B



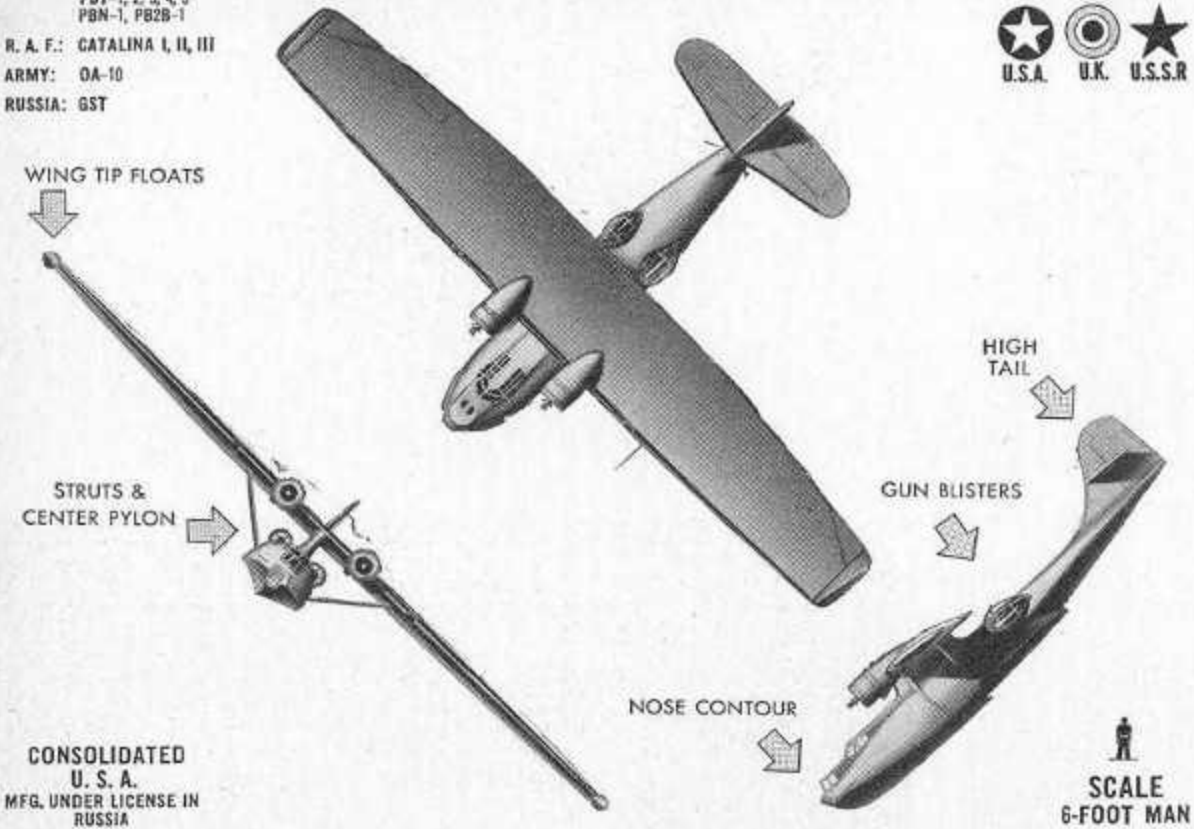
D



NAVY: PBY-5
PBY-1, 2, 3, 4, 5
PBN-1, PB2B-1
R. A. F.: CATALINA I, II, III
ARMY: OA-10
RUSSIA: GST

PATROL BOMBER

U.S.A. U.K. U.S.S.R



CONSOLIDATED
U. S. A.
MFG. UNDER LICENSE IN RUSSIA

SCALE
6-FOOT MAN

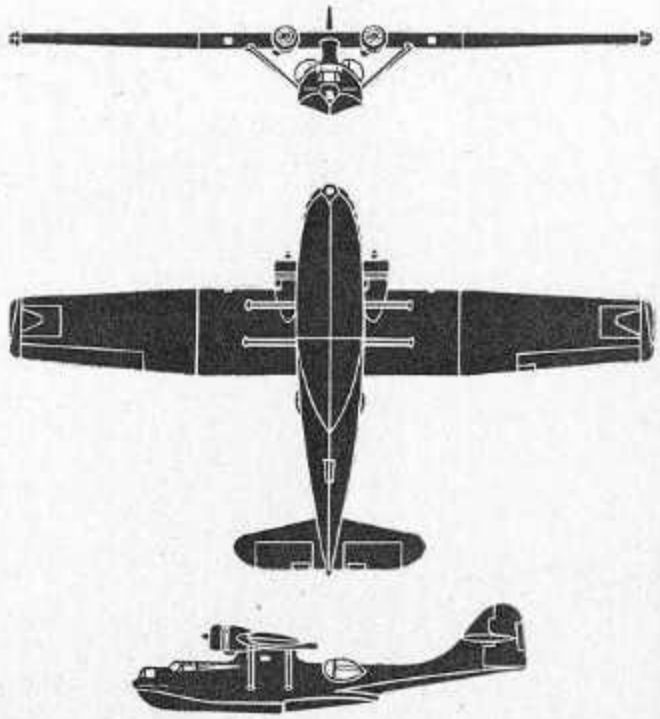
DISTINGUISHING FEATURES: Two-engine parasol-wing monoplane with nearly rectangular wings having square tips. The wing is mounted above the hull on a streamlined superstructure and braced by struts. Wing tip floats are retractable. Two large blister turrets behind wing on hull. Bottom of hull has two steps and sweeps upward to high single fin and rudder.

INTEREST: The "Cat" spotted the German battleship "Bismarck" after the sinking of the British battleship "Hood." Its capacity to stay long hours in the air makes this aircraft ideally suited for its long sub-spotting and convoy-guarding patrols. In the Aleutians and Solomons, the PBY is reported to have been used as a torpedo bomber, carrying two torpedoes under the wing. Alternatively, it can carry eight 325-lb. depth charges or two 2,000-lb. bombs under the wing. The Catalina is built under license in Russia with some modification in armament and engines. The Russian designation is GST.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

PBY "CATALINA"

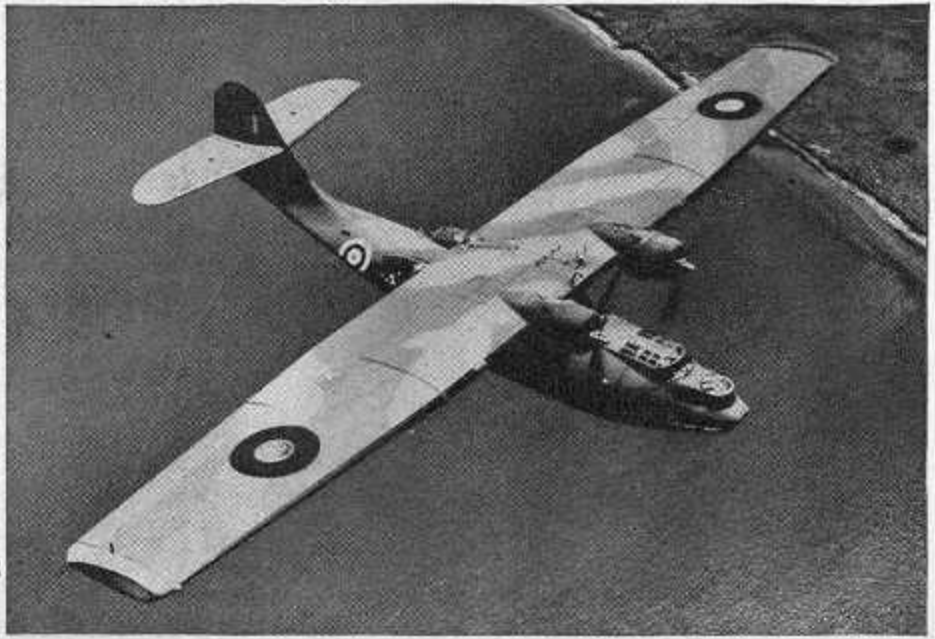


SPAN: 104 ft.
LENGTH: 63 ft. 11 in.
APPROX. MAX. SPEED: 170 m. p. h.

SERVICE CEILING
19,000 ft

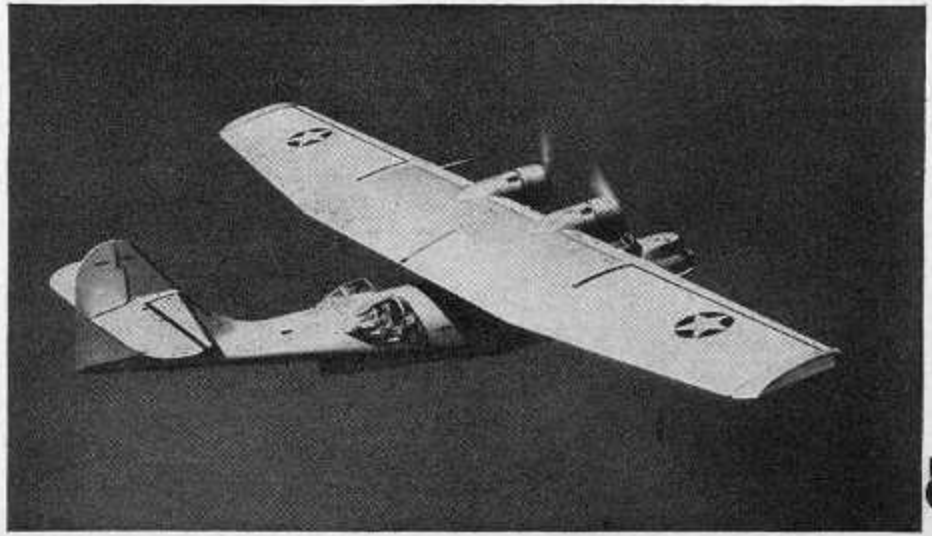
RESTRICTED

A



B

C



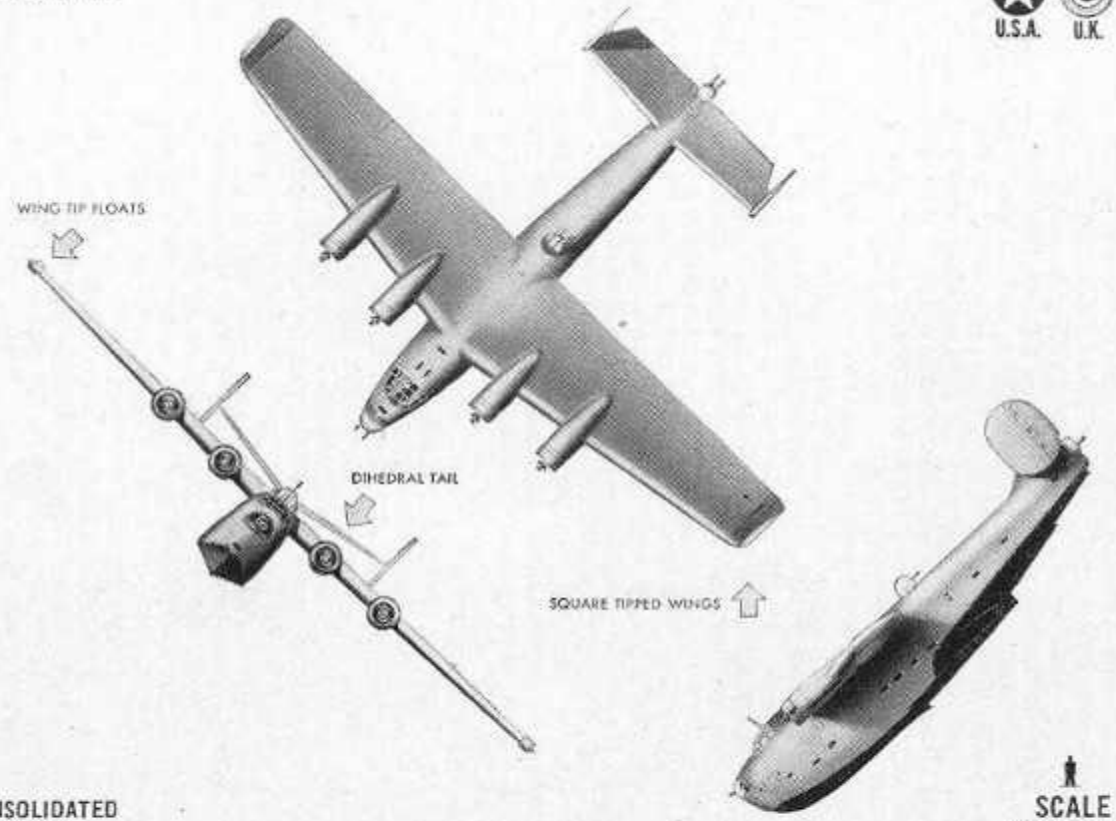
D

NAVY: PB2Y-3
PB2Y-2, 3
R. A. F.: CORONADO

PATROL BOMBER

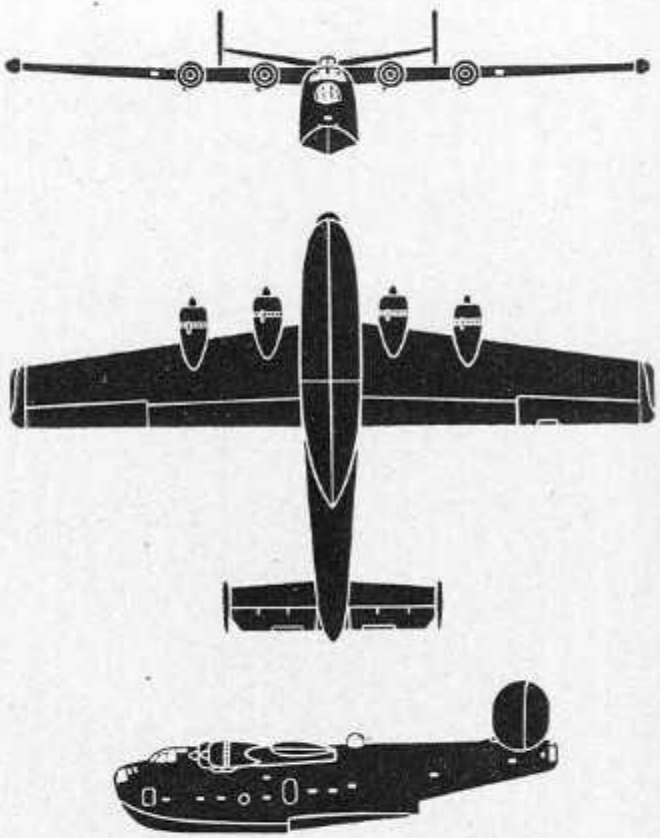
U.S.A. U.K.

PB2Y "CORONADO"



CONSOLIDATED
U. S. A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Four-engine high-wing monoplane. Deep hull with prominent steps tapering toward rear. Leading edge of wing is tapered. Trailing edge straight. Square wing tips. Large rounded twin outboard rudders mounted on a dihedral tail plane. **INTEREST:** The Coronado is a long-range four-engine seaplane of great size, power, and range. It is used mainly as a patrol bomber but in many instances it has been converted for transport purposes in which case it is called the PB2Y–3R. The transport version has gun positions removed and fuselage faired in. The wing tip floats are retractable. The twin fins and rudders are practically identical with those of the B–24 Liberator which is made by the same company.

SPAN: 115 ft.
LENGTH: 79 ft. 3 in.
APPROX. MAX. SPEED: 219 m. p. h.

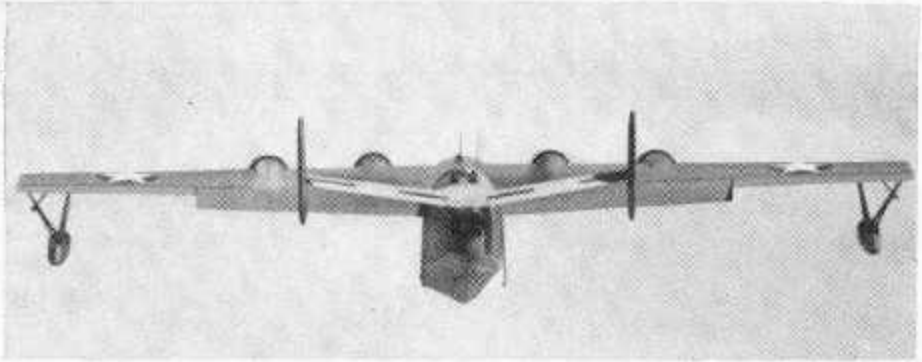
SERVICE CEILING:
20,000 ft.

RESTRICTED

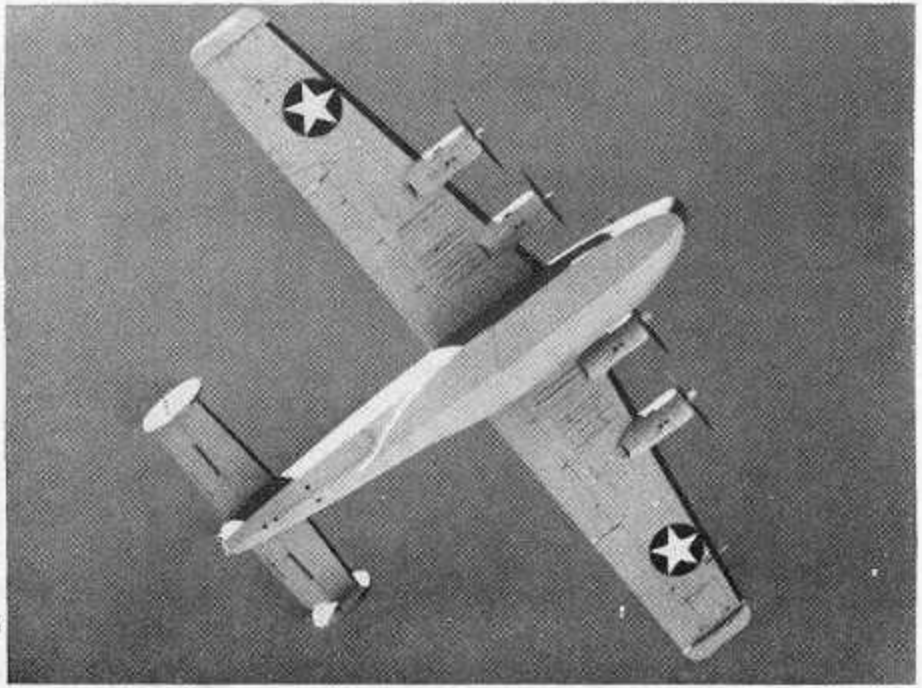
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 1

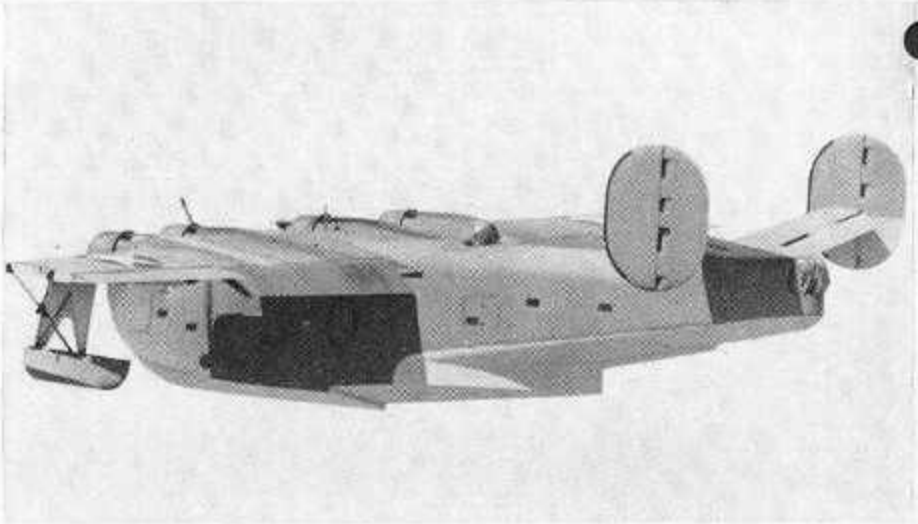
A



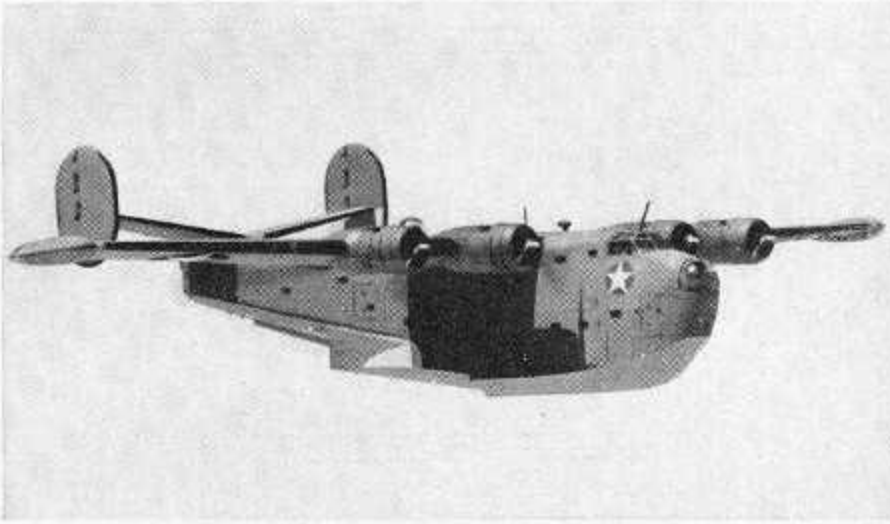
B



C



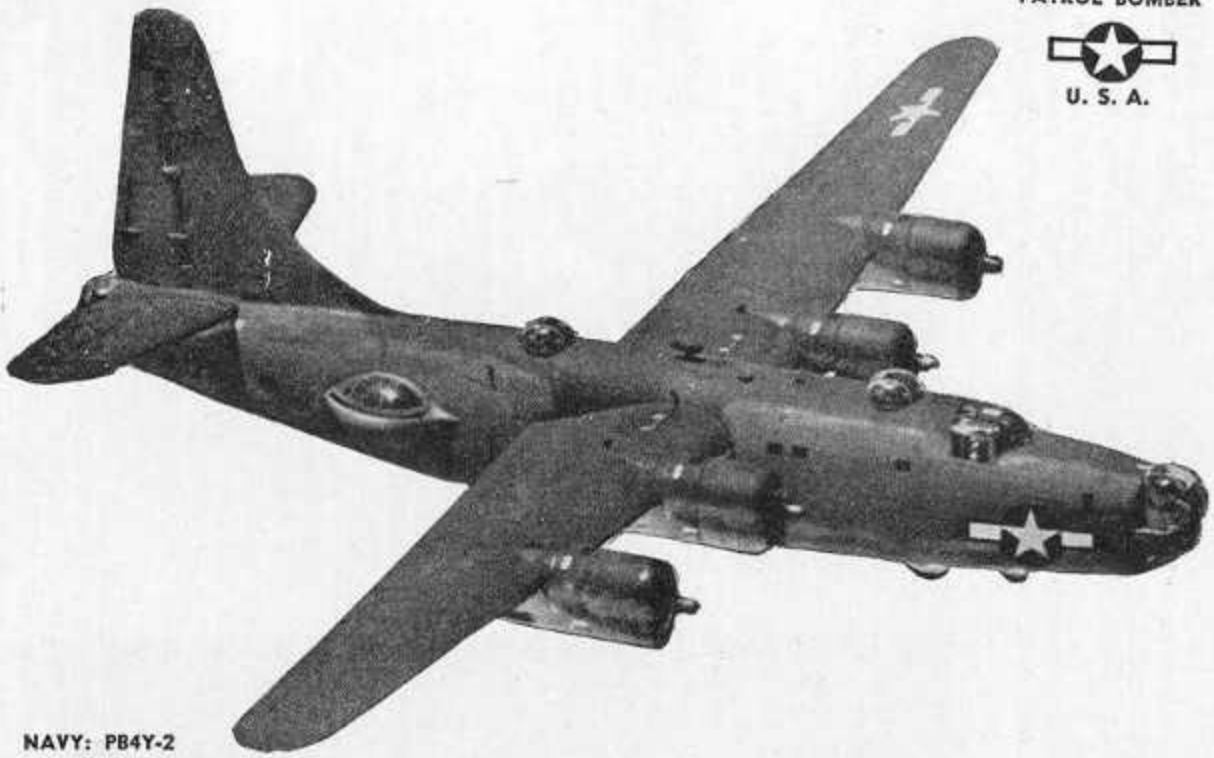
D



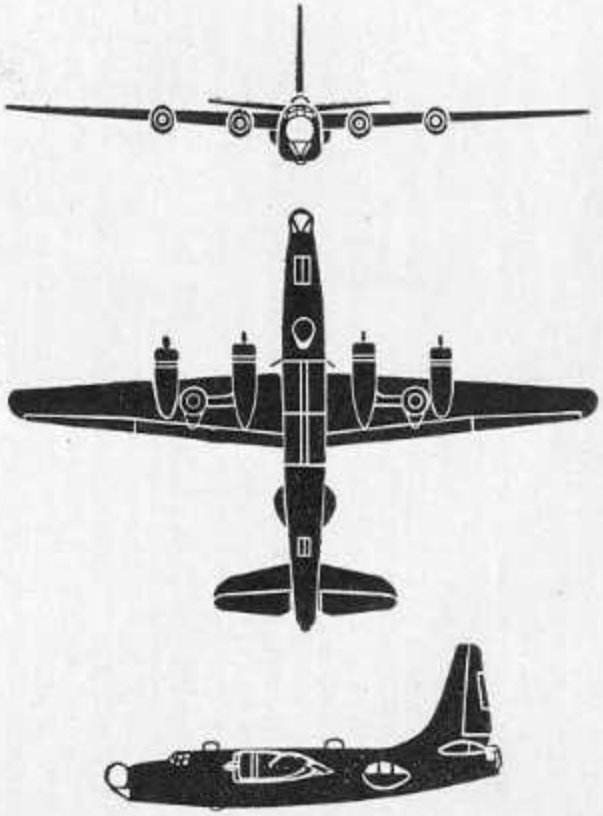
PATROL BOMBER

U. S. A.

PB4Y-2 LIBERATOR



NAVY: PB4Y-2
CONSOLIDATED
U. S. A.



DISTINGUISHING FEATURES: Four-engine, high-wing monoplane with single fin and rudder. This aircraft has an oval-shaped fuselage, similar to the PB4Y-1, but has a large, high, upswept tail which is a very prominent recognition feature. Side blisters are very apparent. There is slightly more taper to the trailing edge than to the leading edge of wings. Tips rounded.

INTEREST: It is the newest Navy patrol bomber, manned by a crew of eleven.

SPAN: 110 ft. 0 in.
LENGTH: 74 ft. 7 in.
MAX. SPEED:

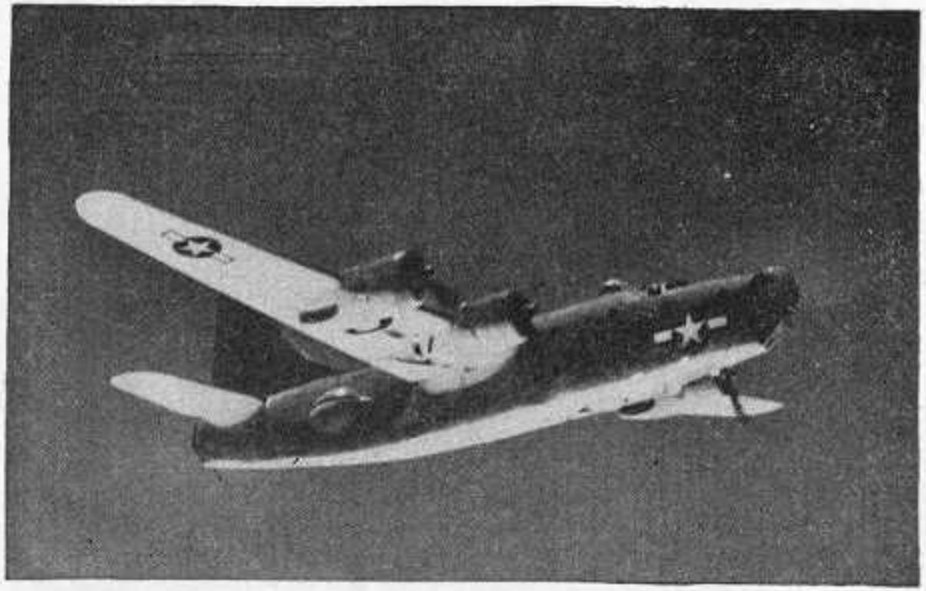
SERVICE CEILING:

RESTRICTED

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

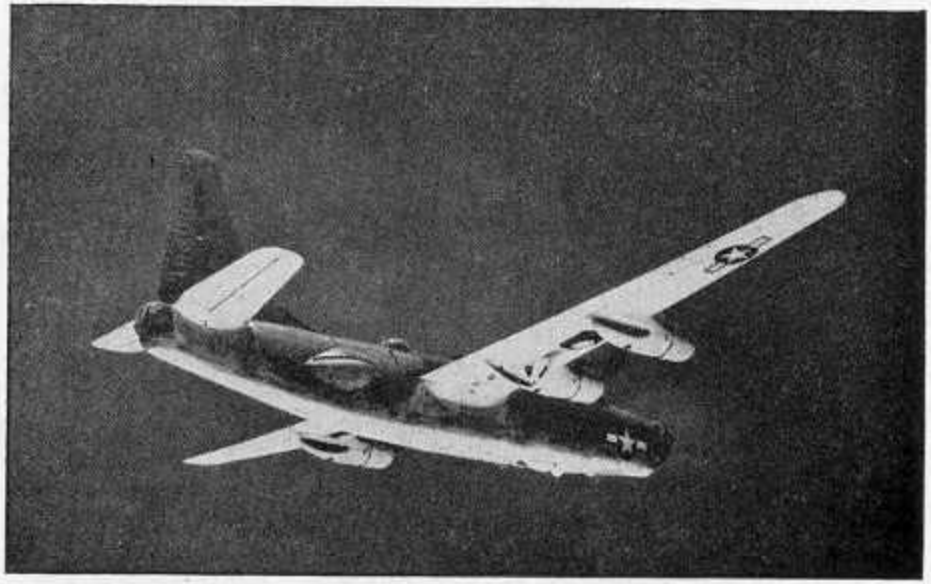
A



C

B

D

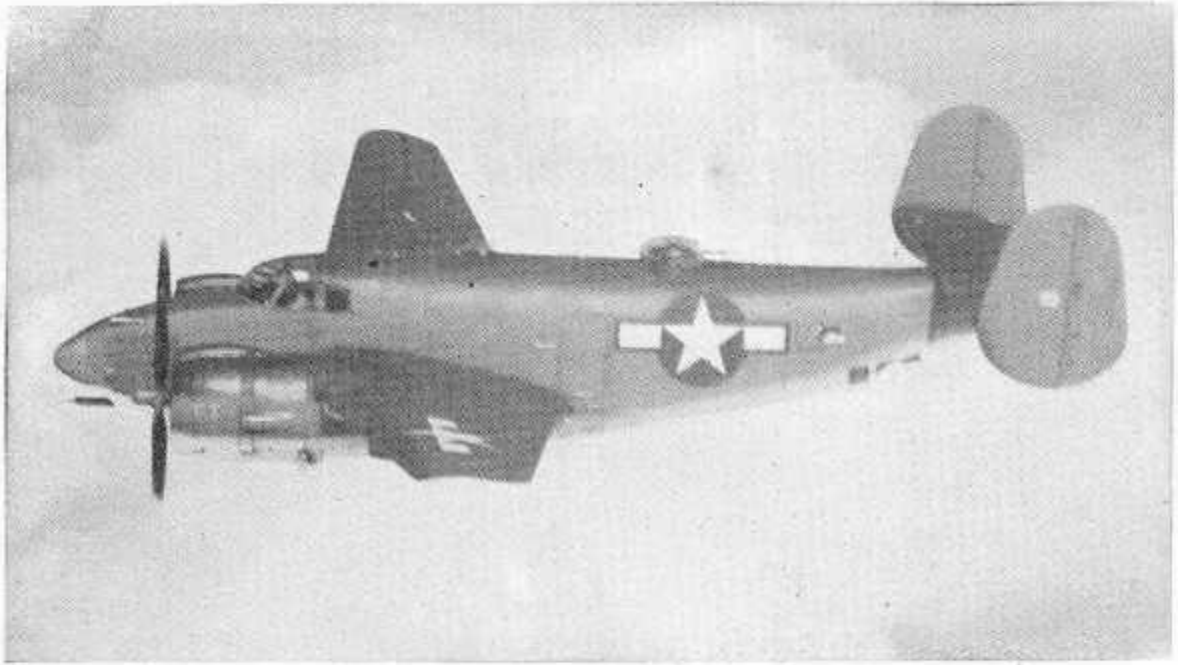


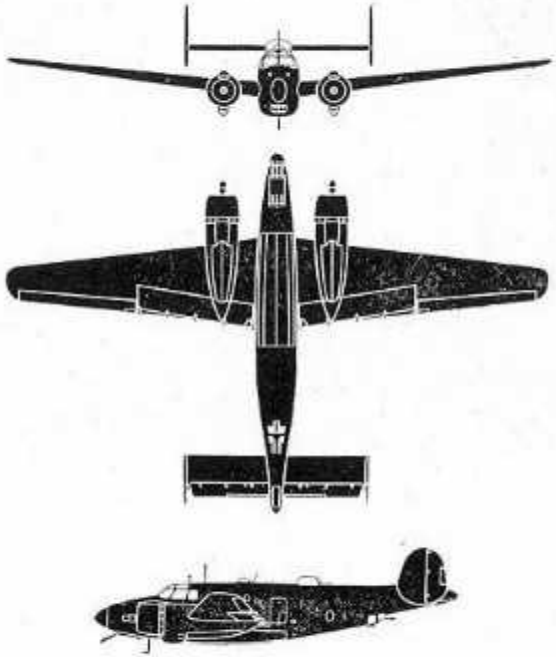
NAVY: PV-2
LOCKHEED
U. S. A.

PATROL BOMBER

U. S. A.

PV-2 HARPOON





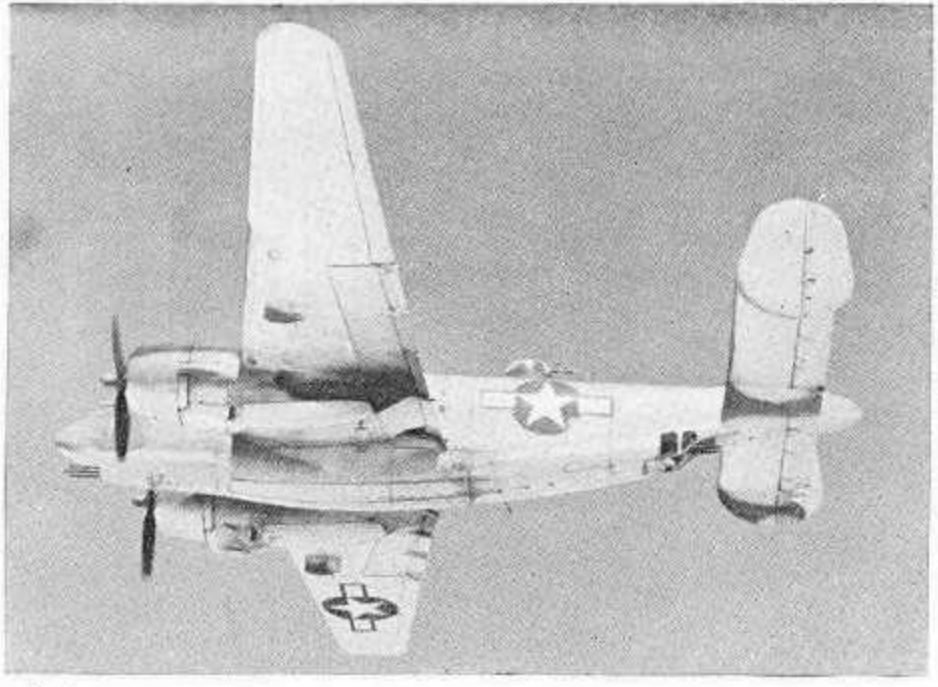
DISTINGUISHING FEATURES: Twin-engine, midwing monoplane with twin fins and rudders. Long narrow wing tapers to bluntly rounded tips and has sharp dihedral from the roots. Fuselage is deep forward, thins out toward slightly upswept tail. Nose is solid, pointed. Rectangular tailplane is set high with rounded fins and rudders placed outboard. Turret rises abruptly from even dorsal line and belly turret interrupts smooth upsweep of ventral line.

INTEREST: Latest in a series of successful warplanes stemming from the Lockheed 14 commercial transport of prewar days, the PV-2 Harpoon is basically an improved PV-1 Ventura. Its 10-foot longer wing span and more rounded wing tips make it more maneuverable, while a redesigned tail assembly provides greater stability. Armament has been increased with five 50-caliber machine guns mounted in the nose, and a power-driven turret carrying two .50's in the belly position.

SPAN: 75 ft. **SERVICE CEILING:** 26,300 ft.
LENGTH: 52 ft. 1 in.
APPROX. MAX. SPEED: Over 300 mph.

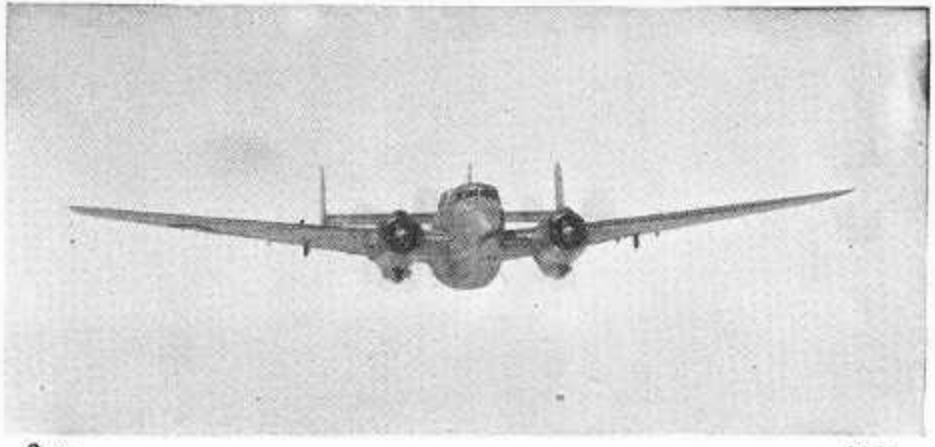
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3



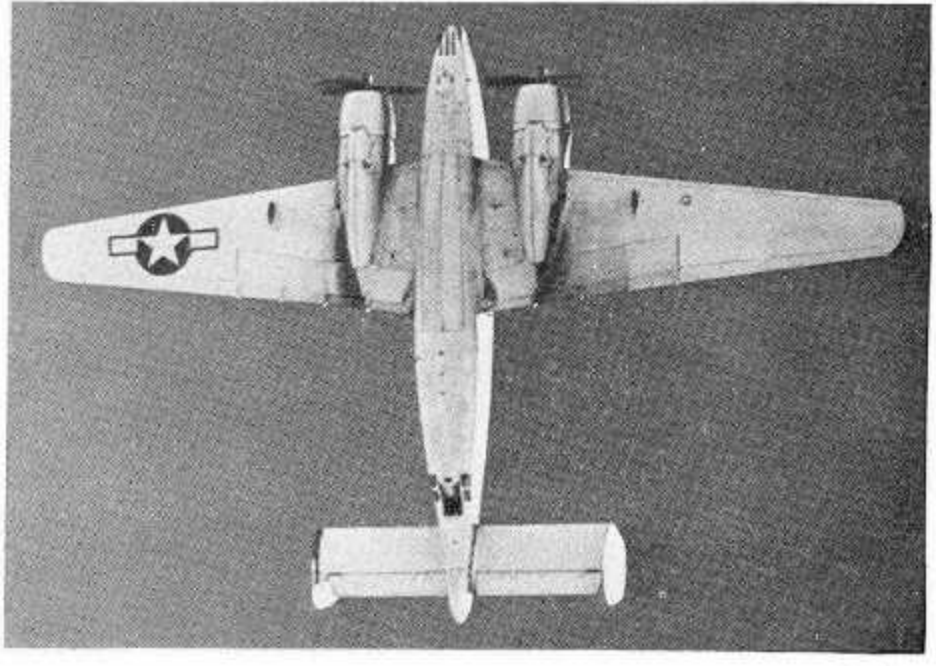
A ▲

▼ B



C ▲

D ▼



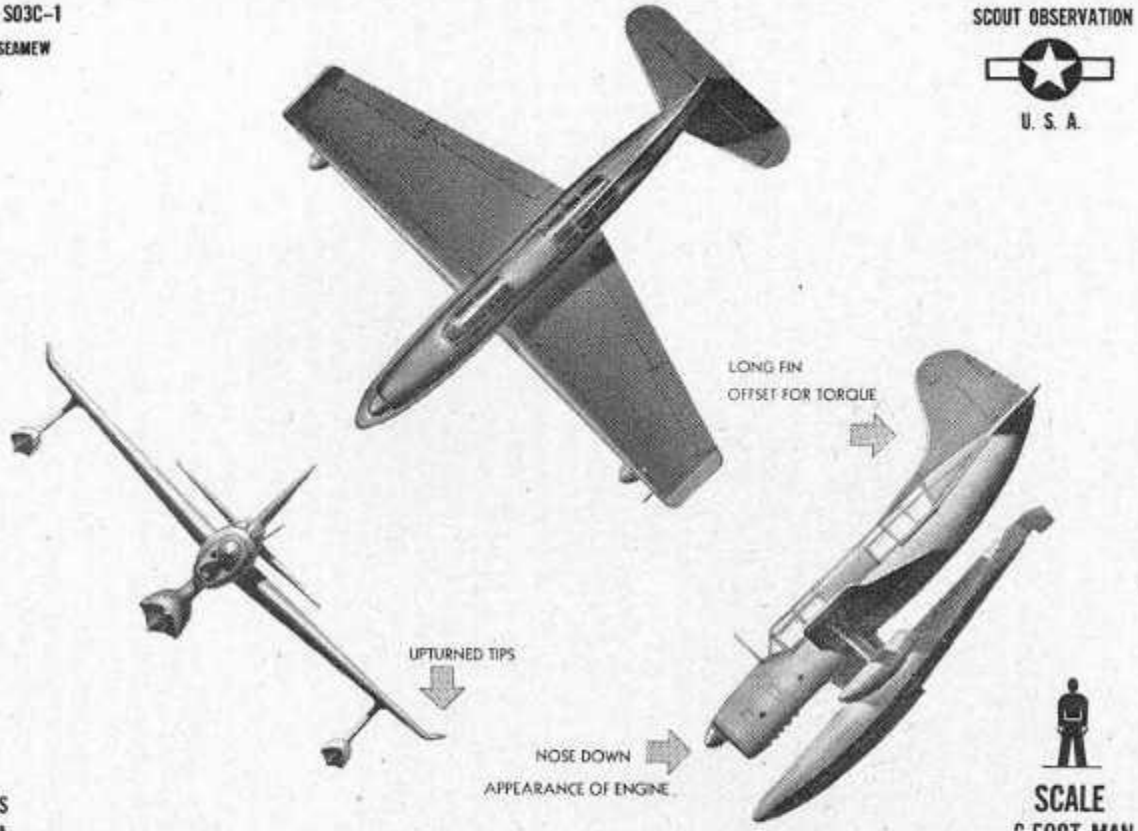
NAVY: SO3C-1

F. A. A. SEAMEW

SCOUT OBSERVATION

U. S. A.

SEAGULL SO3C (Seaplane)

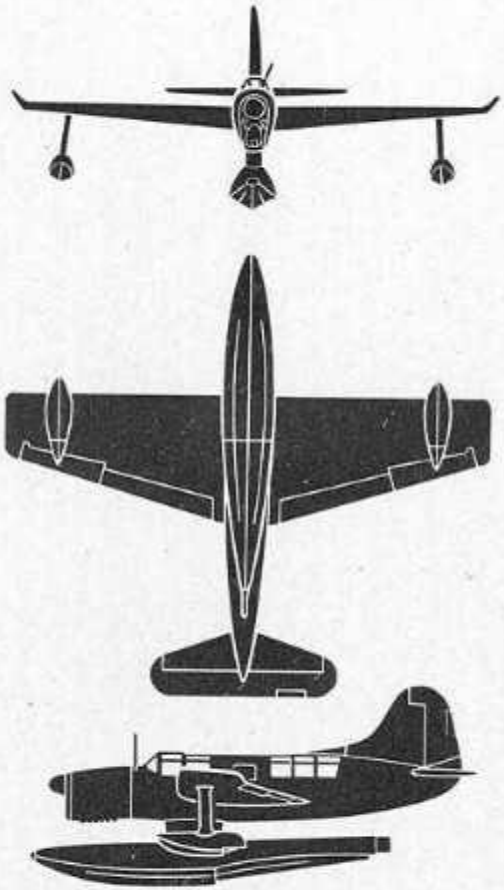


CURTISS

U. S. A.

SCALE

6-FOOT MAN



SPAN: 38 ft.

LENGTH: 35 ft.

MAX. SPEED: 183 m. p. h. at 12,000 ft.

SERVICE CEILING: 15,200 ft.

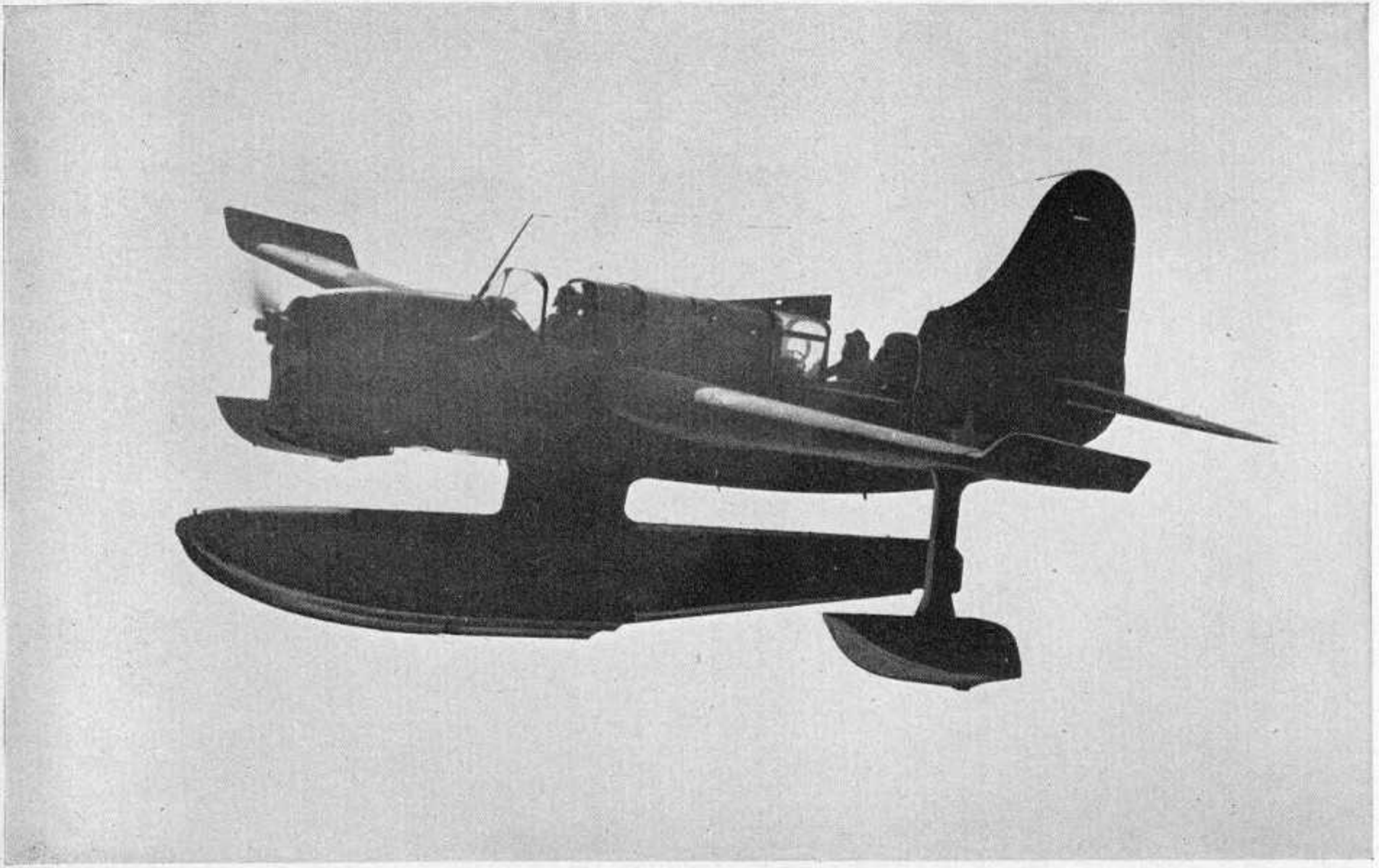
DISTINGUISHING FEATURES: Single-engine, mid-wing monoplane. Single large float with fixed wing floats. Wing has straight leading edge, tapered trailing edge, and square upturned tips. Fuselage narrow with long greenhouse faired back to the tail. Deep inline engine has a nose-down appearance with spinner at top. Large rounded fin and rudder sweeps forward over rear of greenhouse. Tailplane set back with straight trailing edge, tapered leading edge and round tips.

INTEREST: The Seagull is designed for operation as gun spotter for the Fleet. An interesting feature is the air-cooled, inverted, inline engine. Equipped for catapult launching, the Seagull can be easily landed in rough waters and is known for its long range. This plane is known as the "Seamew" in the British Fleet Air Arm. Some of the earlier Seagulls have a curved trailing edge on the elevator.

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

RESTRICTED

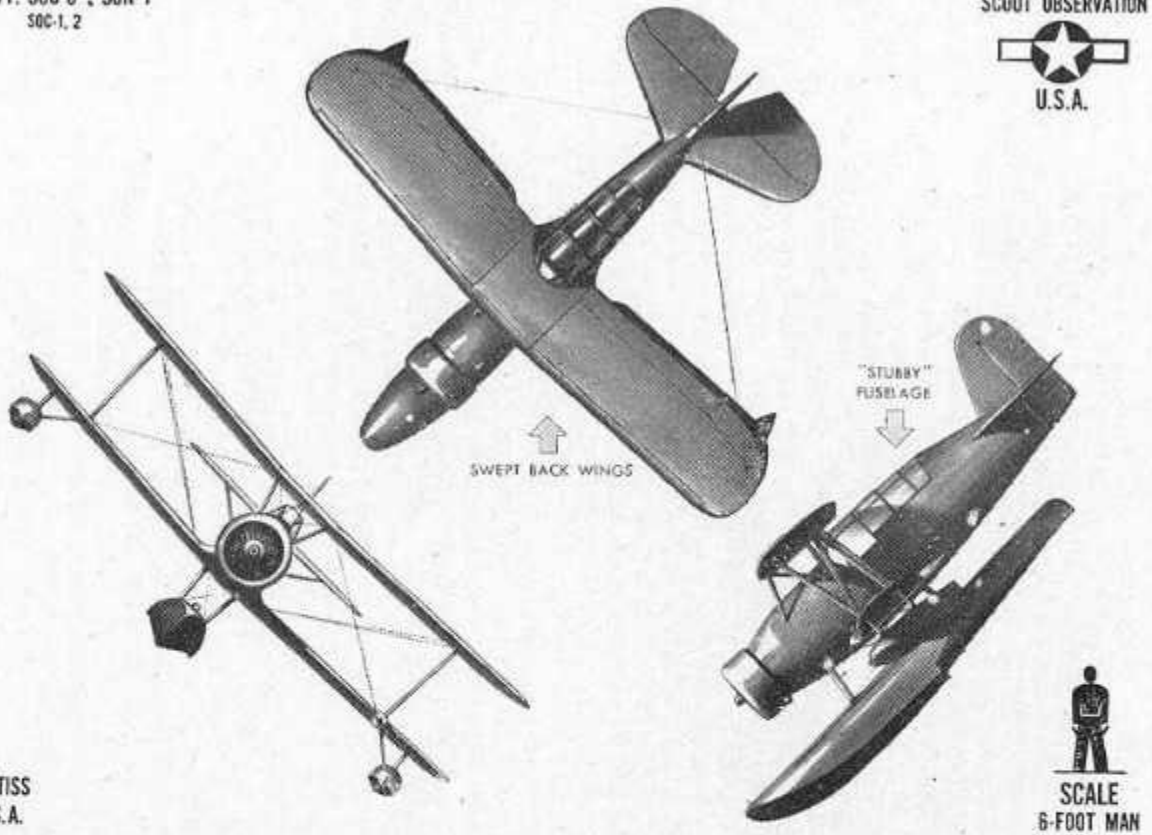


NAVY: SOC-3 ; SON-1
SOC-1, 2

SCOUT OBSERVATION

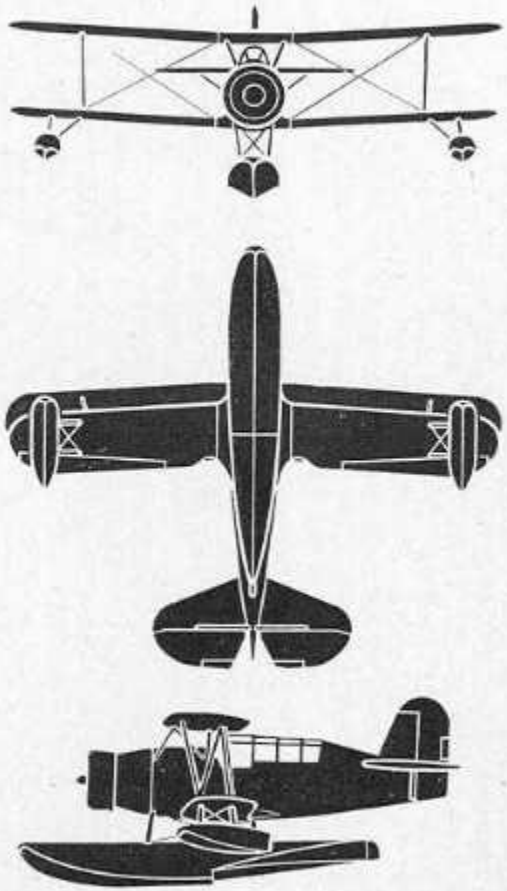
U.S.A.

CURTISS SOC (Seaplane)



CURTISS
U.S.A.

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Single radial engine biplane with large single float. Equal-span rectangular wings have rounded tips and are slightly swept back and staggered. N-shaped struts and small wing-tip floats. Short deep fuselage with large cockpit enclosure faired abruptly at the rear. Large tailplane has tapered leading edge, rounded tips and very large cut-out in trailing edge. Single fin and rudder has vertical trailing edge, tapered leading edge, and rounded tip.

INTEREST: Although obsolete, this plane is still used on many battleships and cruisers for spotting gunfire and for scouting purposes. It is sturdily built for catapult take-offs and landings in rough weather. Its slow speed and ease of handling make it ideally suited for spotting.

SPAN: 36 ft.
LENGTH: 31 ft. 9 in.
SERVICE CEILING: 13,300 ft.
MAX. SPEED: 162 m. p. h. at 800 ft.

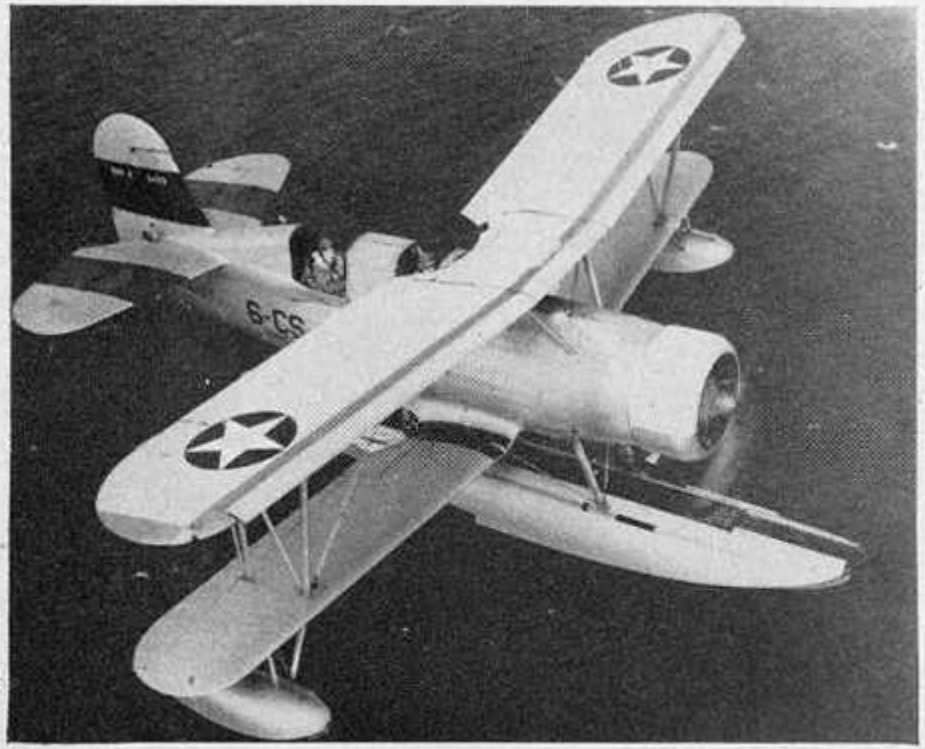
RESTRICTED

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

A

B



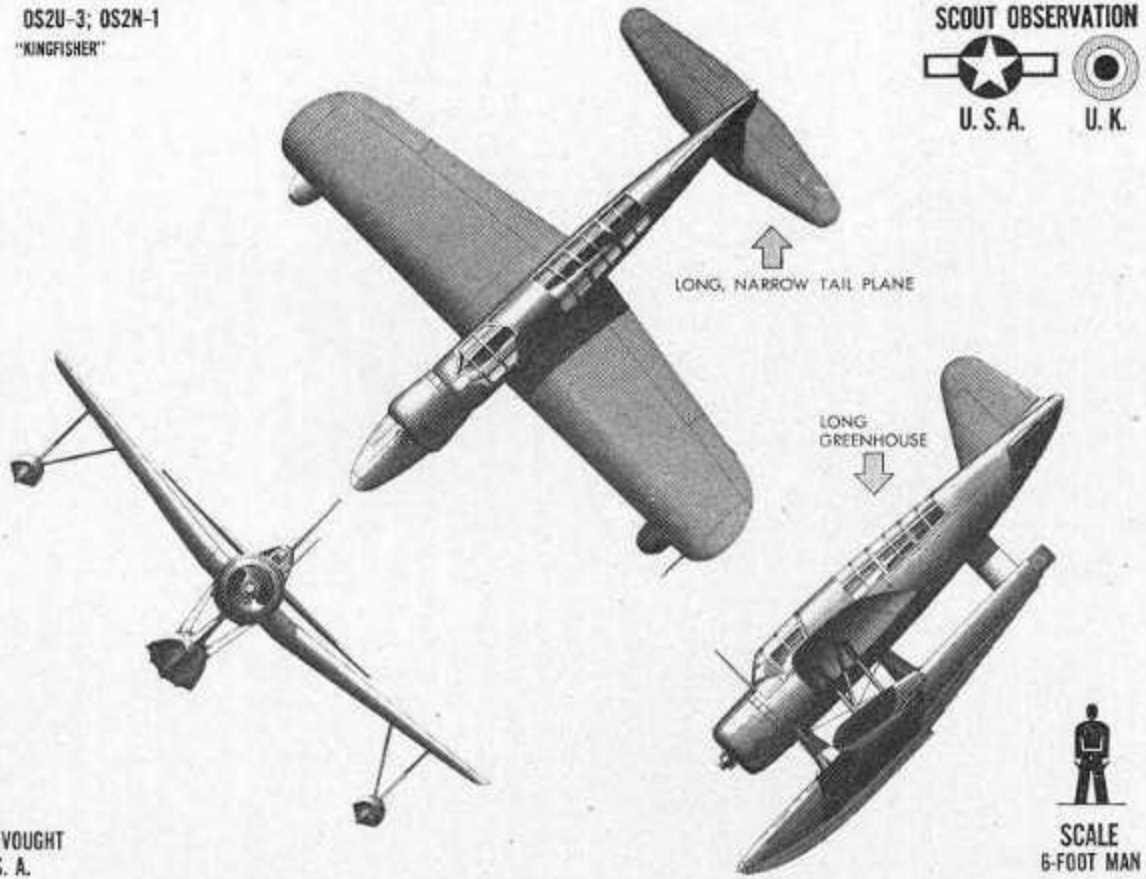
C

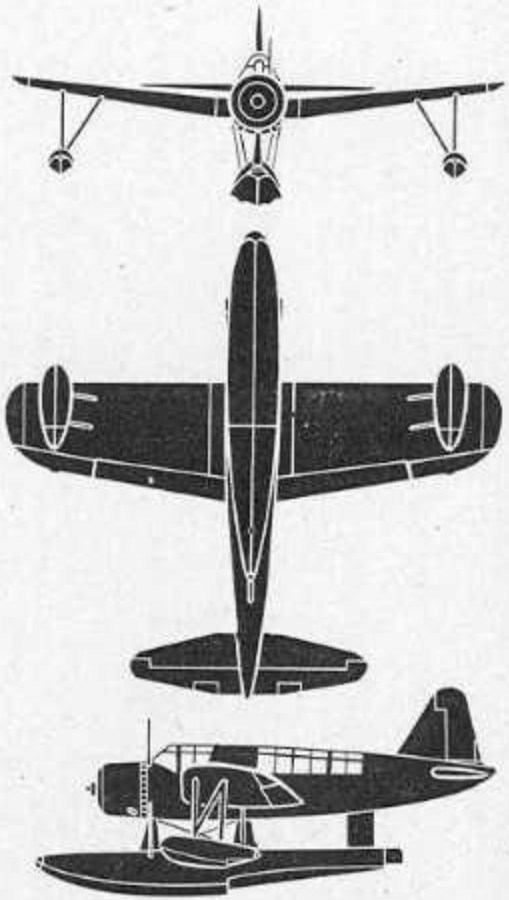
NAVY: OS2U-3; OS2N-1
U. K.: "KINGFISHER"

SCOUT OBSERVATION

U. S. A. U. K.

KINGFISHER OS2U (Seaplane)





CHANCE VOUGHT
U. S. A.

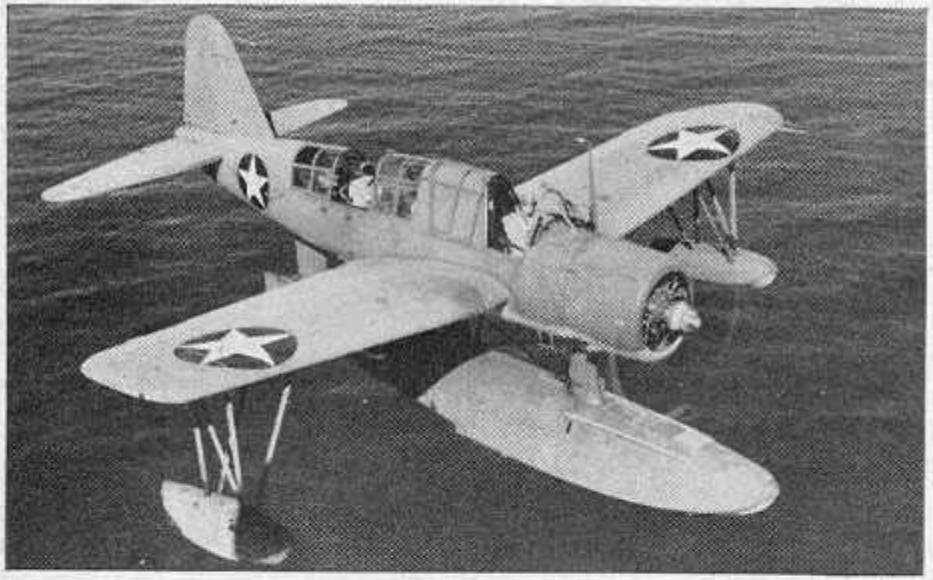
DISTINGUISHING FEATURES: Low mid-wing monoplane with single float. Wing has straight leading edge, slightly tapered trailing edge and curved tips. Long faired greenhouse extending nearly to the tail. Narrow, diamond-shaped tailplane with round tips set aft of the fin. Tapered fin and rudder with round tip. Single float supported by two faired struts beneath the wing and a wide plate strut at the after end. Prominent wing-tip floats.

INTEREST: The principal function of the Kingfisher is to spot gunfire for the Fleet. It is designed for catapulting from battleships or cruisers and has replaced the Curtiss SOC as the principal observation floatplane of the U. S. Navy.

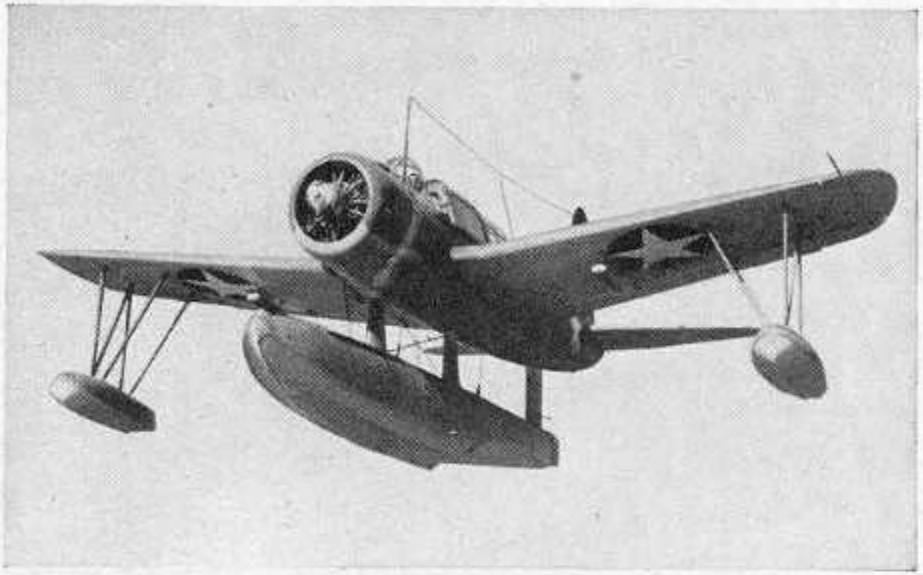
SPAN: 35 ft. 11 in.
LENGTH: 33 ft. 10 in.
MAX. SPEED: 164 m. p. h. at 5,500 ft.
SERVICE CEILING: 13,000

RESTRICTED

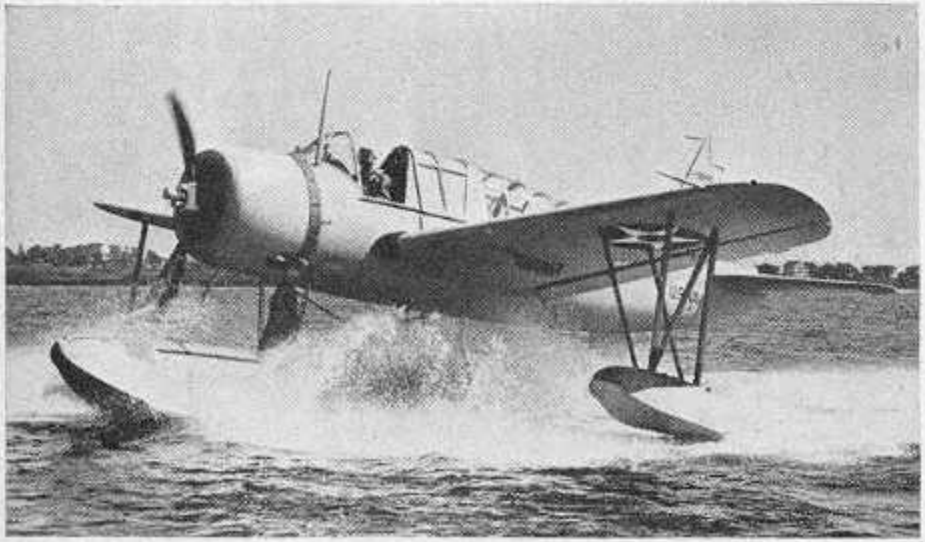
A



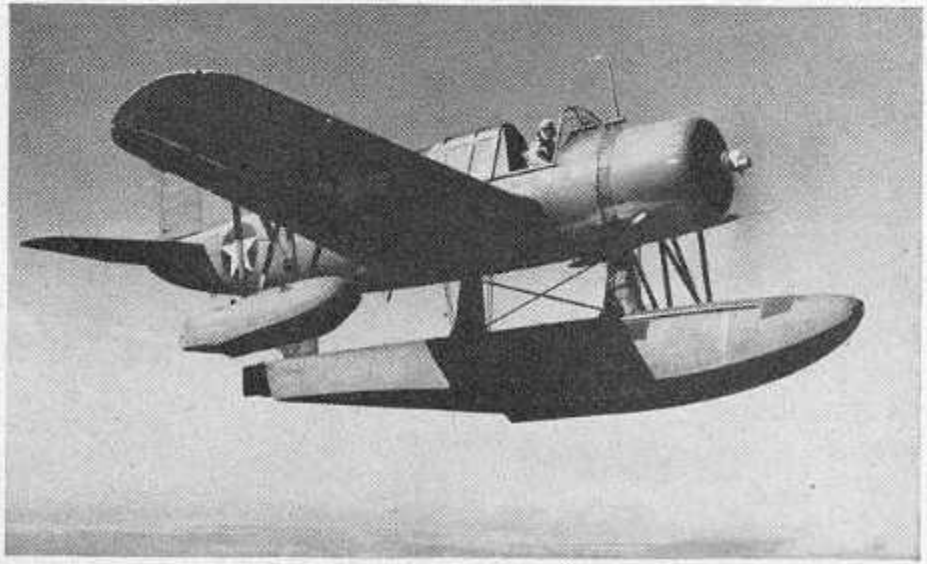
C



B



D

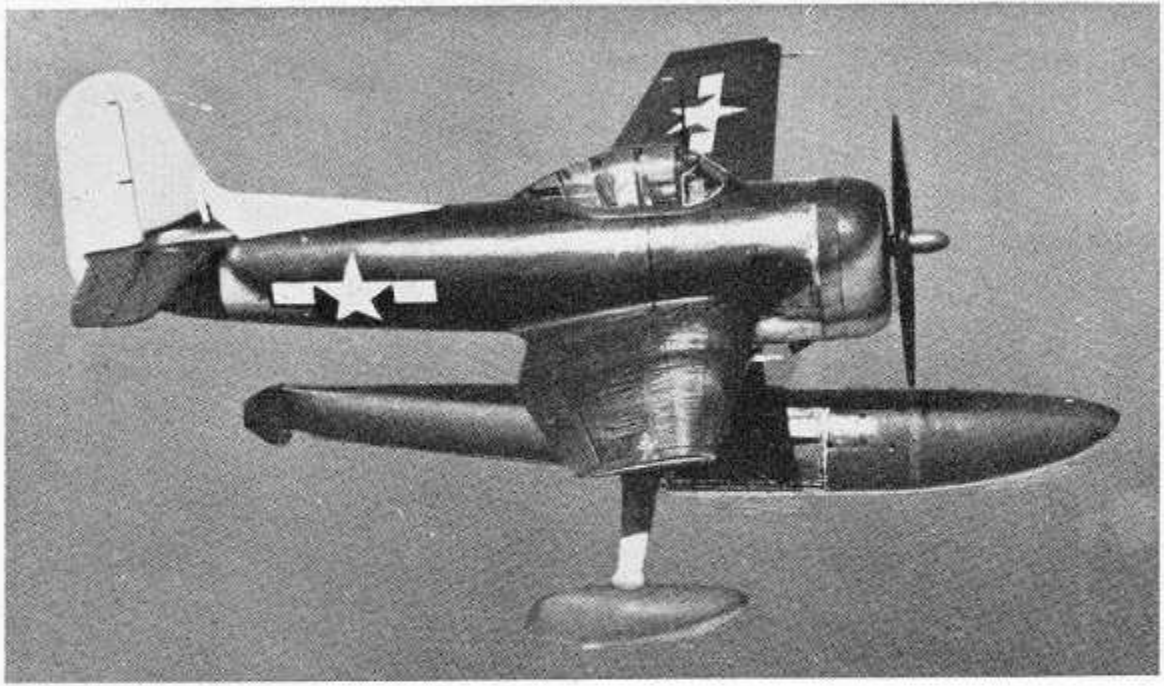


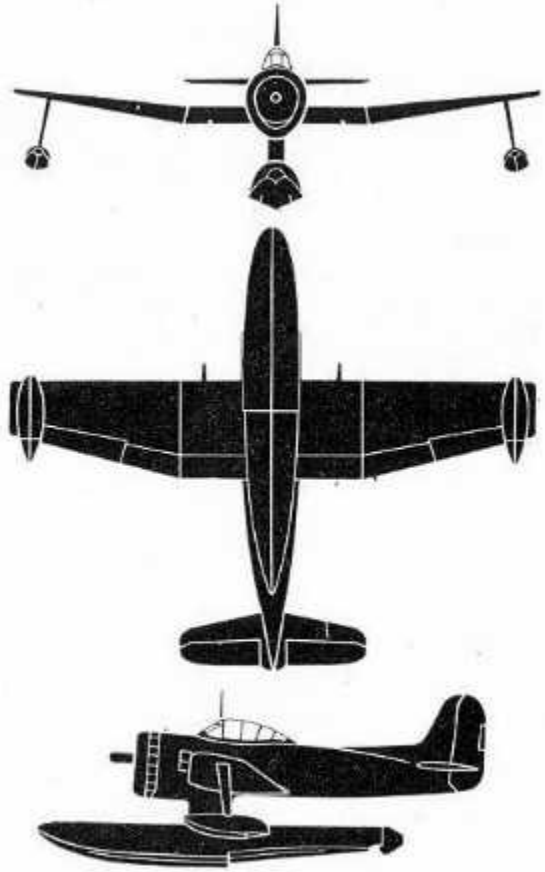
NAVY: SC
CURTISS
U. S. A.

SCOUT

U. S. A.

SC SEA HAWK





DISTINGUISHING FEATURES: Single - engine, low-wing monoplane, equipped either with long, single float or fixed landing gear. Wing is tapered only on trailing edge of outer panels and has square tips. Outboard panels have dihedral. Fuselage has short, deep nose and bubble-type cockpit canopy. Central float and wing tip floats attached by single pedestals or struts. Fin and rudder rather tall and narrow, with long fairing projecting forward into fuselage.

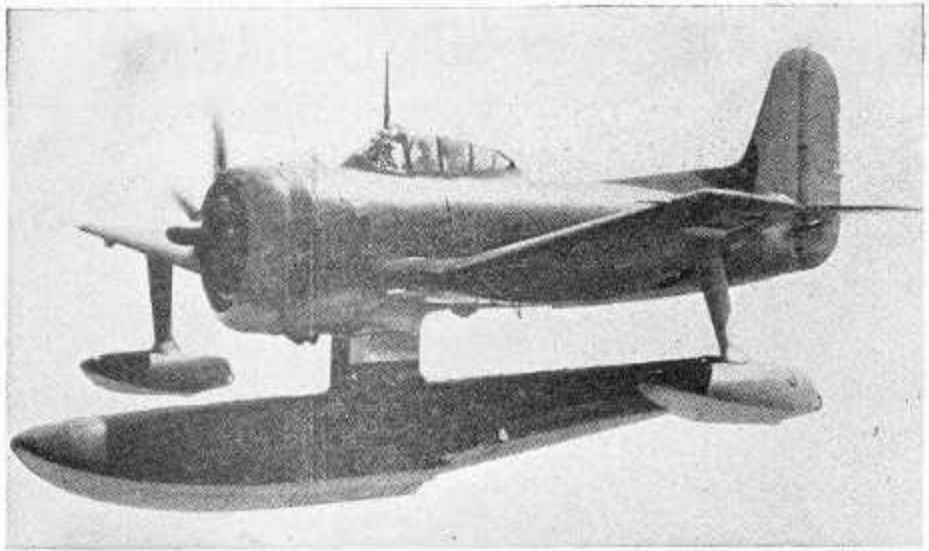
INTEREST: New aerial eye for the U. S. fleet, the SC scout seaplane will gradually replace the older SOC's and OS2U's. It is intended to operate primarily from the catapults of warships, but, like the OS2U, the SC can be fitted with fixed landing gear, for operation from land bases. The Seahawk should substantially increase the speed and range of observation of U. S. battleships and cruisers.

SPAN: 41 ft. **SERVICE CEILING:** 37,300 ft.
LENGTH: 37 ft. 8 in.
APPROX. MAX. SPEED: Over 300 mph.

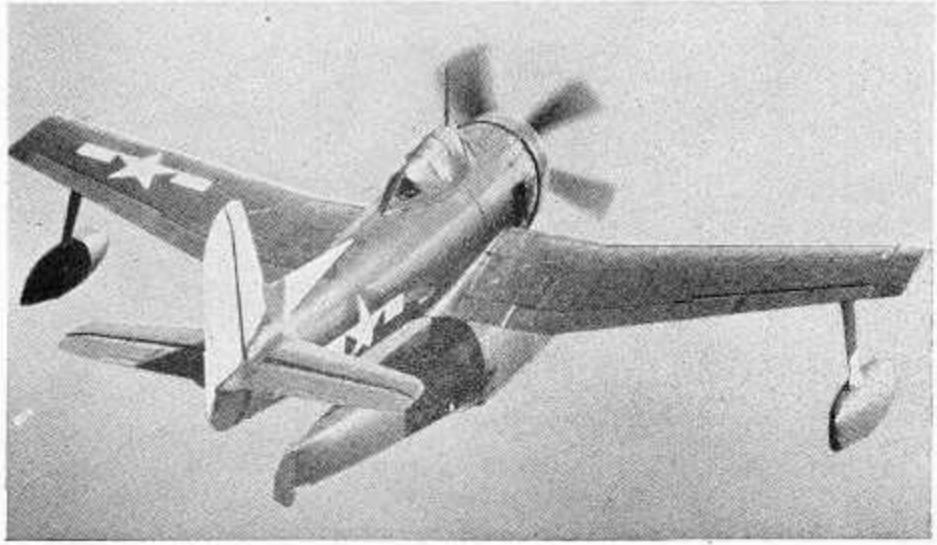
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

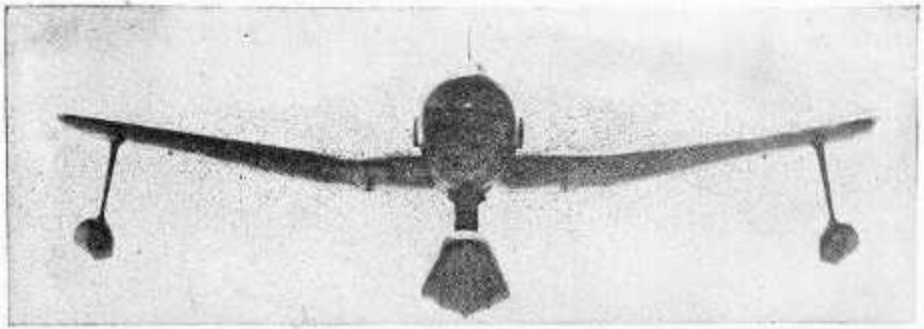
SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

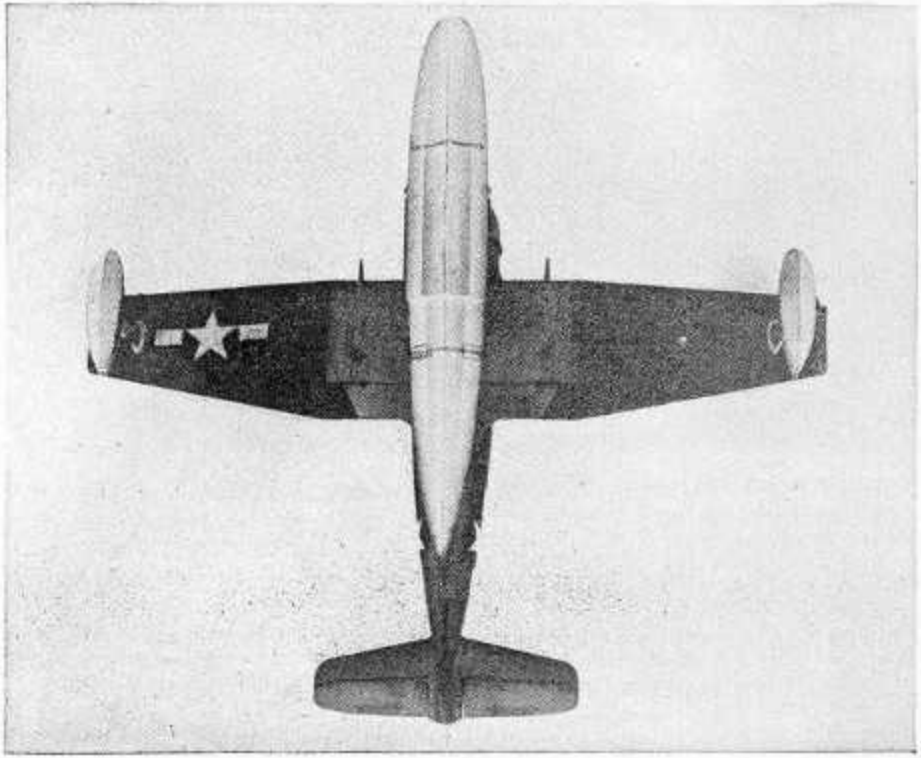


A ▲ B ▼





C ▲ D ▼



UNITED KINGDOM
(BRITISH)
AIRCRAFT

R. A. F.: SPITFIRE V
SPITFIRE series

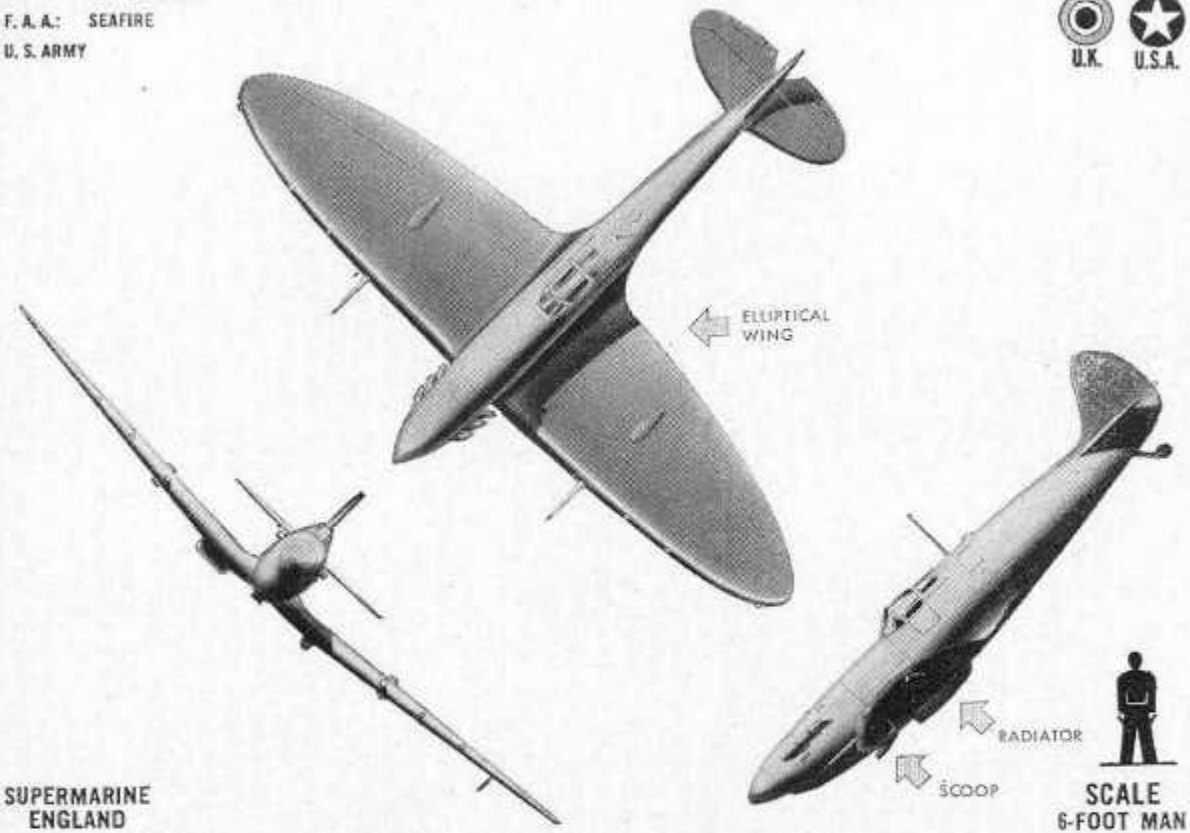
F. A. A.: SEAFIRE

U. S. ARMY

FIGHTER

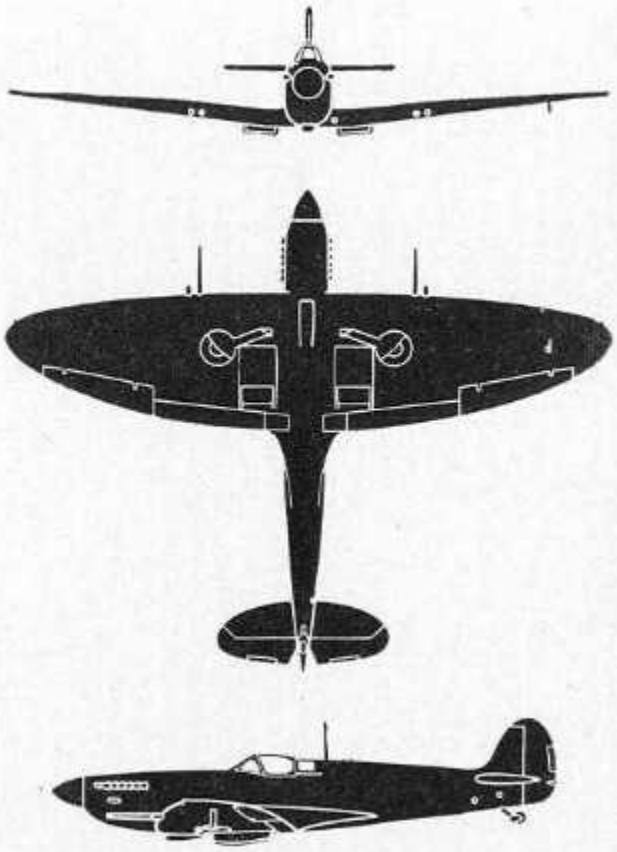
U.K. U.S.A.

"SPITFIRE"



SUPERMARINE
ENGLAND

SCALE
6-FOOT MAN



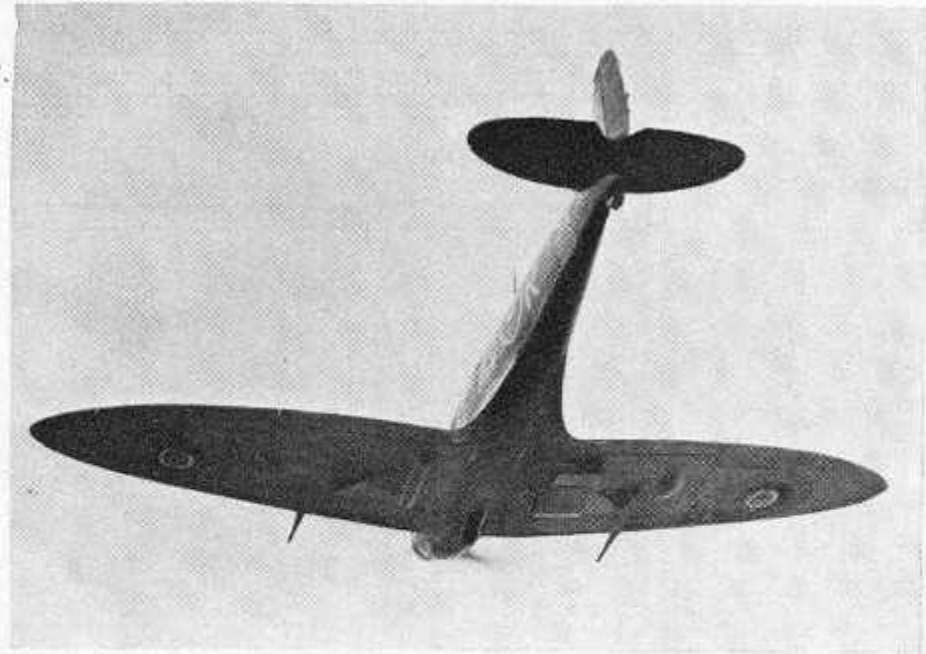
DISTINGUISHING FEATURES: Low-wing monoplane with full dihedral and characteristic elliptically curved wing outline. Radiator intake off-set on underside of wing. Mark IX has radiator intake under both wings. Single in-line engine with large pointed spinner and long narrow fuselage. Stabilizer and elevator are set high on fuselage, with elliptical curved outline and

INTEREST: The "Spit" played a great part in defeating the Luftwaffe in the Battle of Britain. Its speed, rate of climb, superior maneuverability, and great fire power make it one of the finest single-engine fighters in the world. A carrier-based version, the "Seafire", has been used in the Mediterranean and to protect convoys to Russia. Three latest type "Spits" are reported to have

SPAN: 36 ft. 10 in.

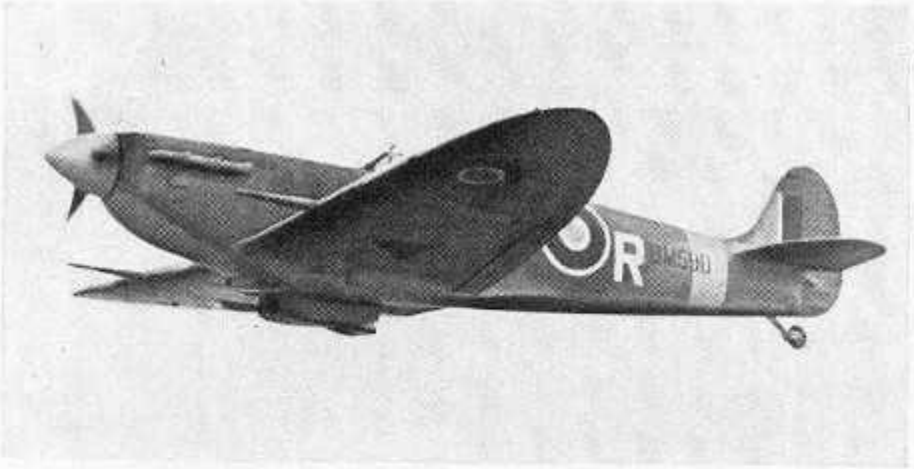
SERVICE CEILING

A

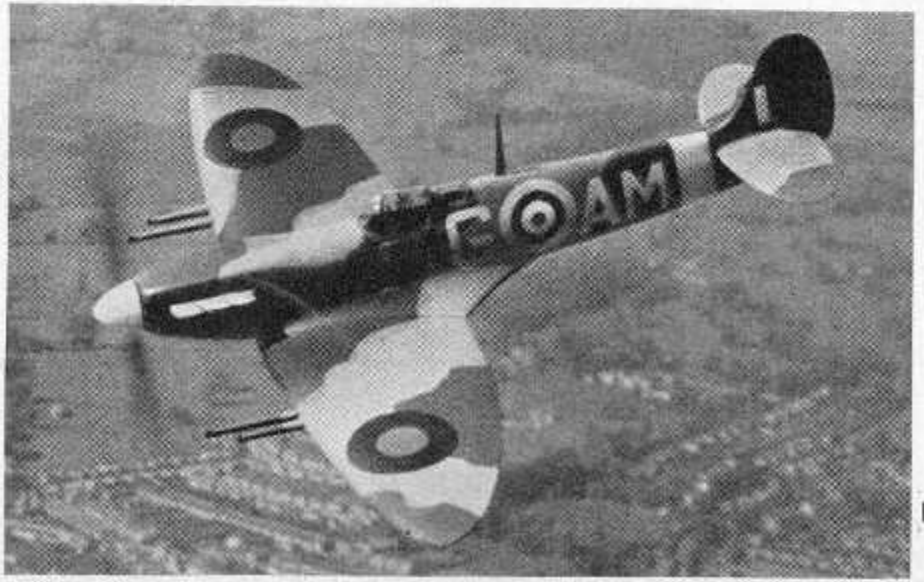


B

C



D



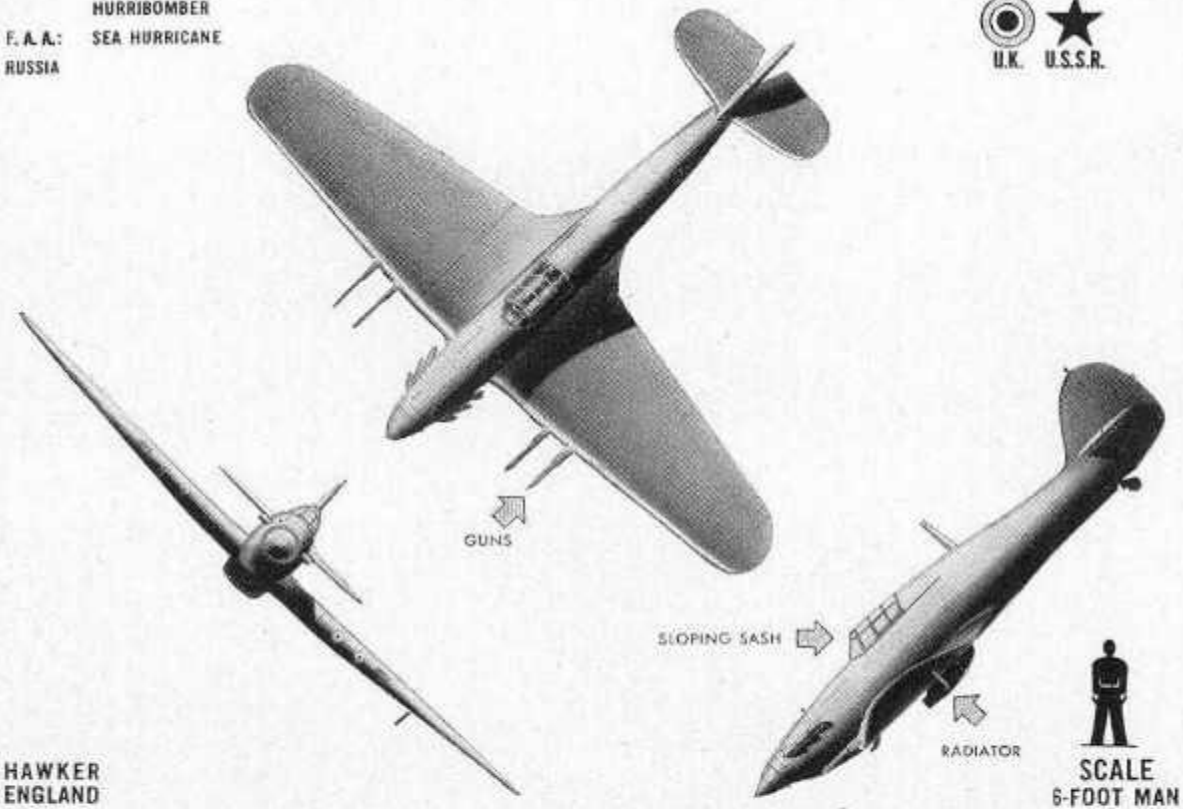
R. A. F.: **HURRICANE IIc**
HURRICANE I, II
HURRIBOMBER

F. A. A.: SEA HURRICANE

RUSSIA

FIGHTER—LIGHT BOMBER

U.K. U.S.S.R.



HAWKER
ENGLAND

SCALE
6-FOOT MAN

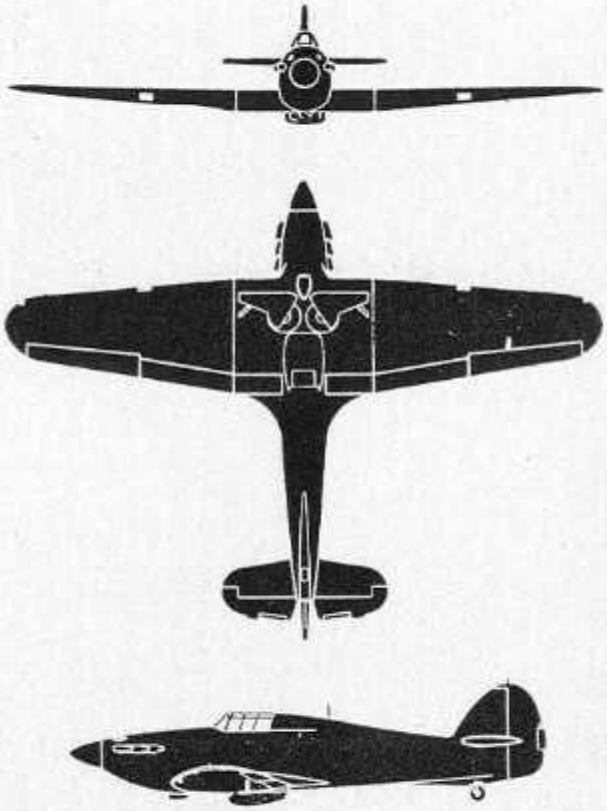
DISTINGUISHING FEATURES: Low-wing monoplane with single in-line engine. Wings have slight dihedral and equal taper in outer section, with rounded tips. Fuselage has hump-back effect and pointed nose, with large air-scoop on underside below cockpit. Very large rounded fin and rudder. Stabilizer and elevator have rounded tips with cut-away in trailing edge.

INTEREST: Hurricanes, along with Spitfires, played an outstanding role in the Battle of Britain. In fact, Hurricanes shot down more aircraft than all other types put together. Although early models were used almost exclusively for interception at high altitudes, more recently this aircraft has been used for low-level bombing, dive bombing, and night fighting. As a carrier-based fighter with the Fleet Air Arm, it has done outstanding work in protecting convoys to Russia. Some versions carry as many as 12 machine guns, while others mount four 20-mm. cannon. For tropical service the Hurricane is equipped with a large scoop under the nose.

APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 9

"HURRICANE"



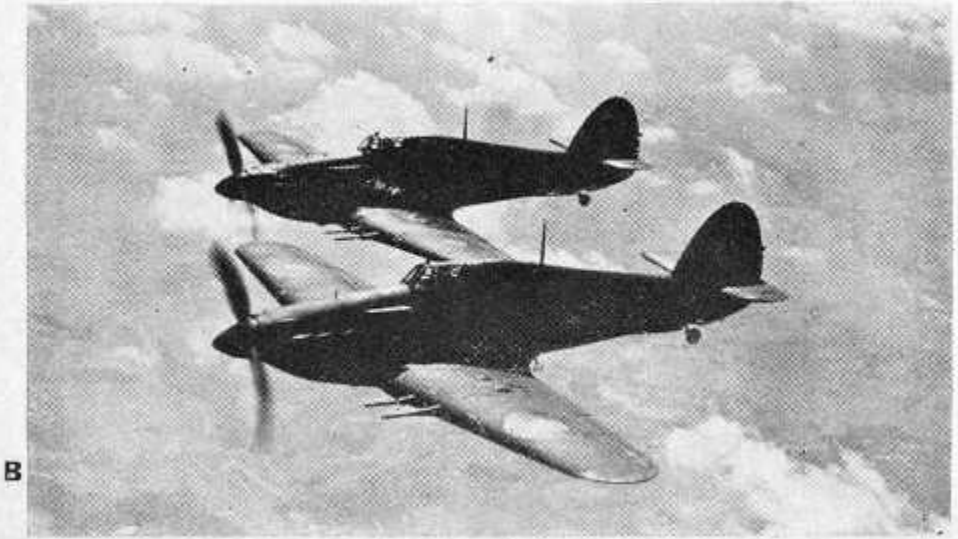
SPAN: 40 ft.
LENGTH: 31 ft. 5 in.
APPROX. SPEED: 335 m. p. h. at 22,000 ft.

SERVICE CEILING:
36,600 ft.

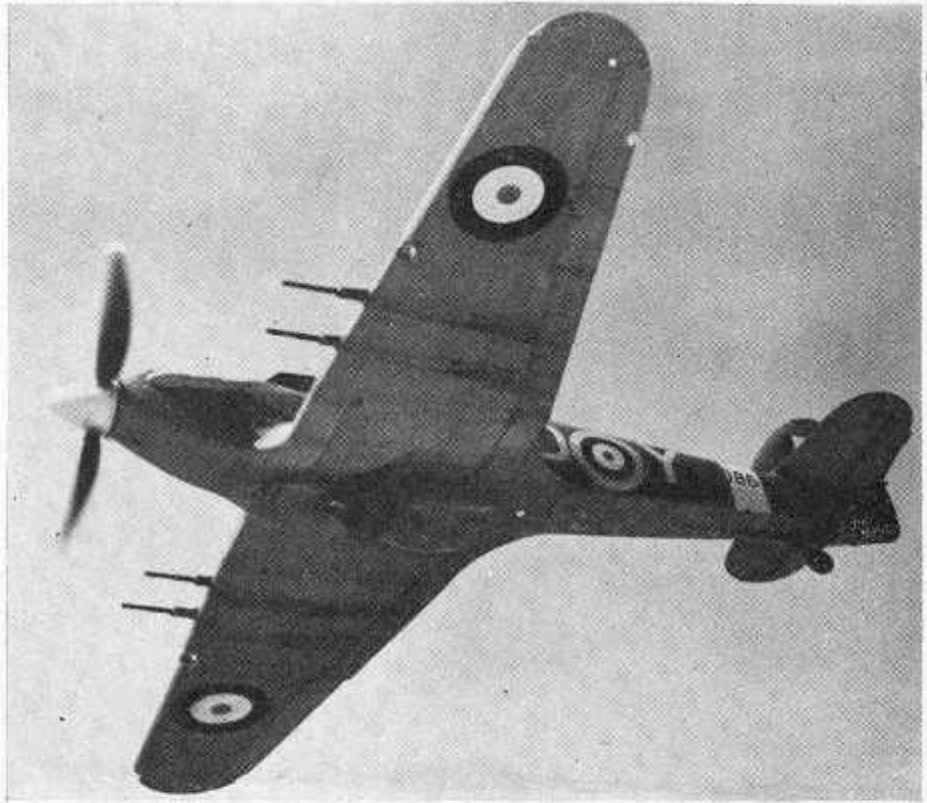
RESTRICTED

A

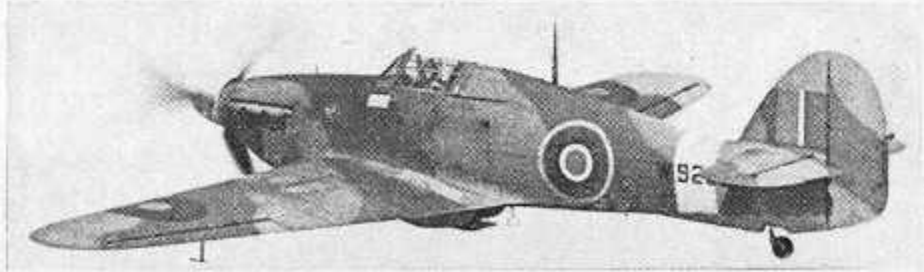
B



C



D

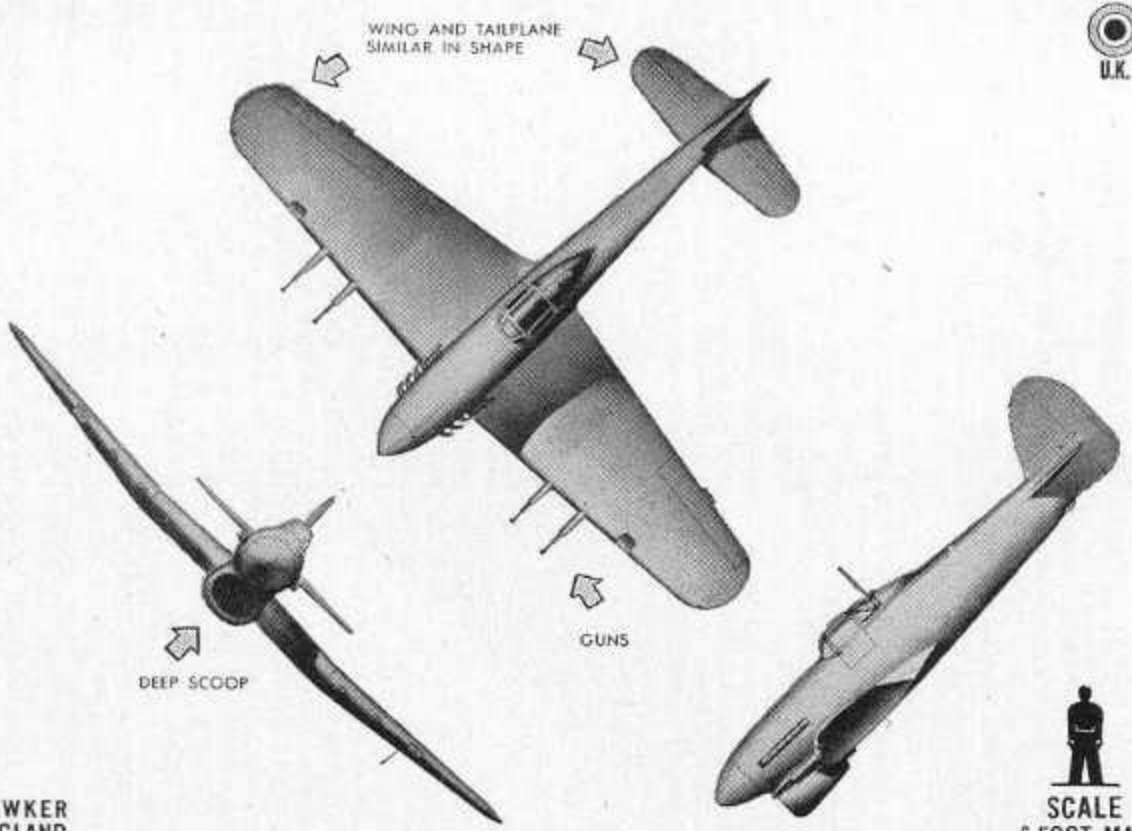


R. A. F., F. A. A.: TYPHOON I

FIGHTER

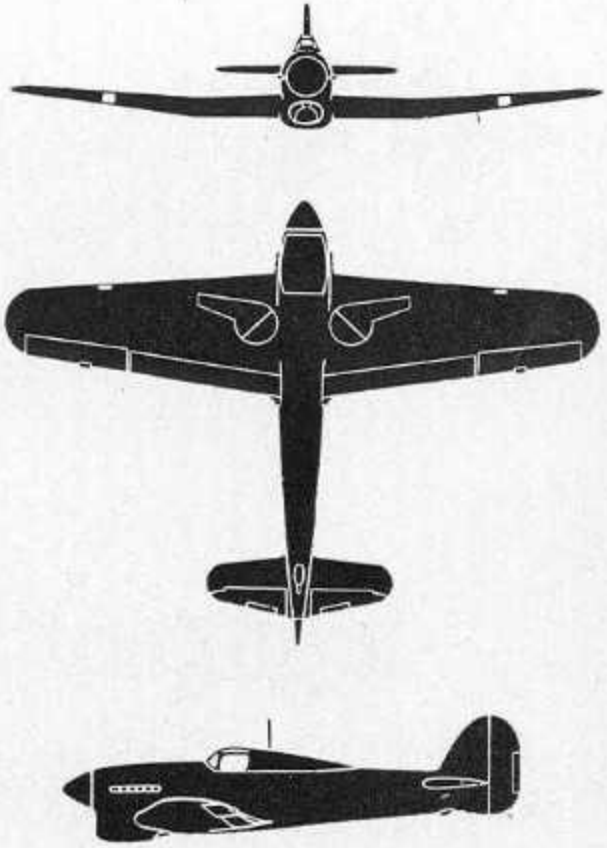
U.K.

"TYPHOON"



HAWKER
ENGLAND

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Low-wing monoplane with single in-line engine. Dihedral on outer wing panels only. Short pointed nose. Equally tapered wings with rounded tips. Large radiator intake under nose. Well-curved fin and rudder, extending slightly below fuselage.

INTEREST: The newest member of the famous Hurricane "family" and one of the latest surprises for the enemy. Its designer was drawing plans for this aircraft two years before the outbreak of war. With a speed of over 400 miles per hour, the Typhoon has been built around one of the world's most powerful engines. Its creator showed his vision in that instead of designing his ship and getting an engine, he found his engine and built a ship to fit it. This high-altitude fighter in some respects resembles a Hurricane, but is much larger and from the side views does not have the hump-back appearance of the Hurricane.

SPAN: 41 ft. 7 in.
LENGTH: 31 ft. 8½ in.
MAX. SPEED:

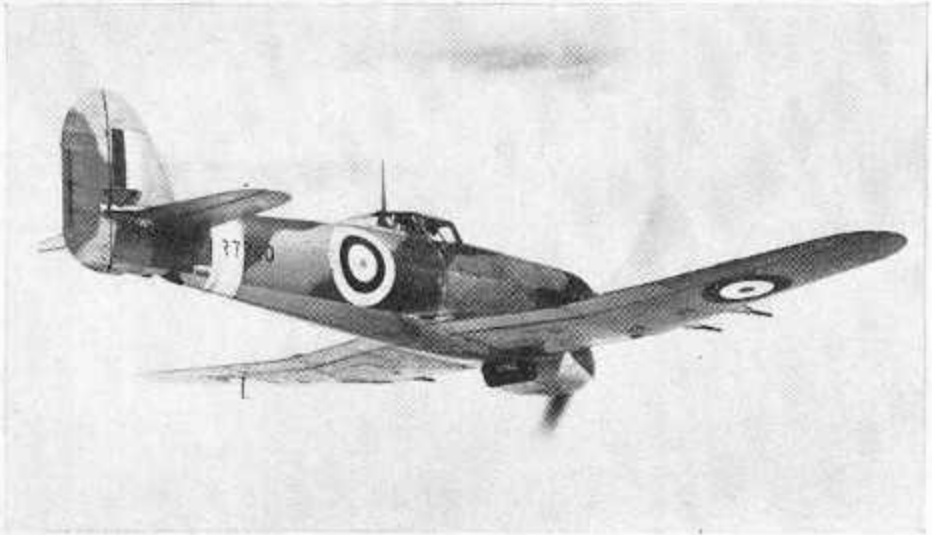
SERVICE CEILING:

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

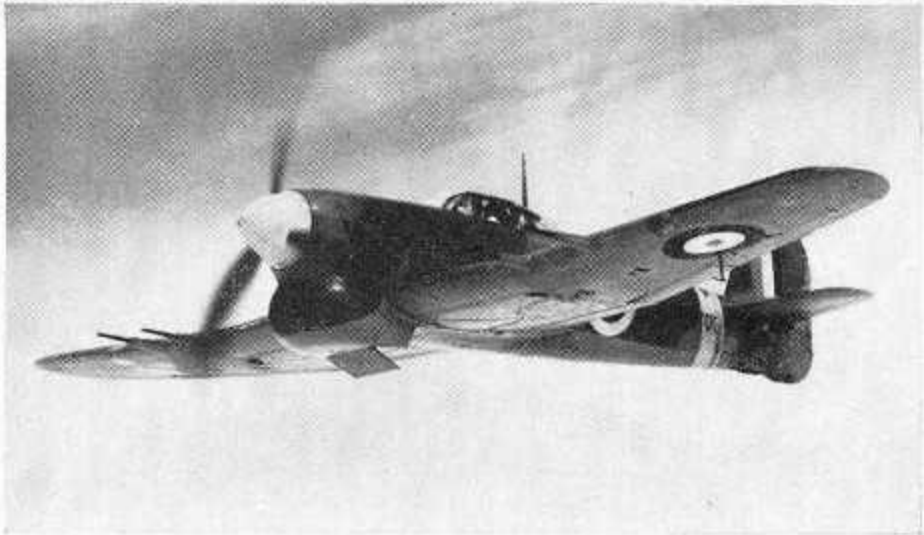
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

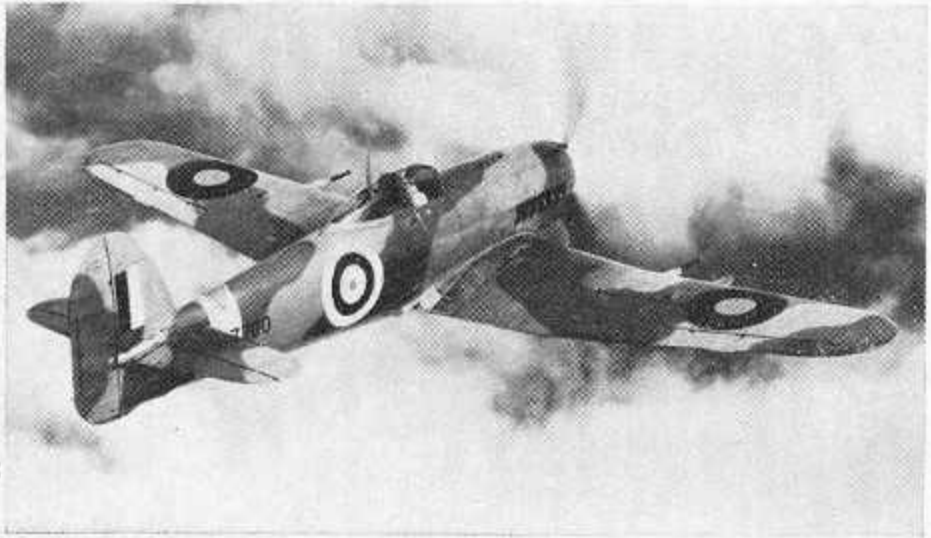
A



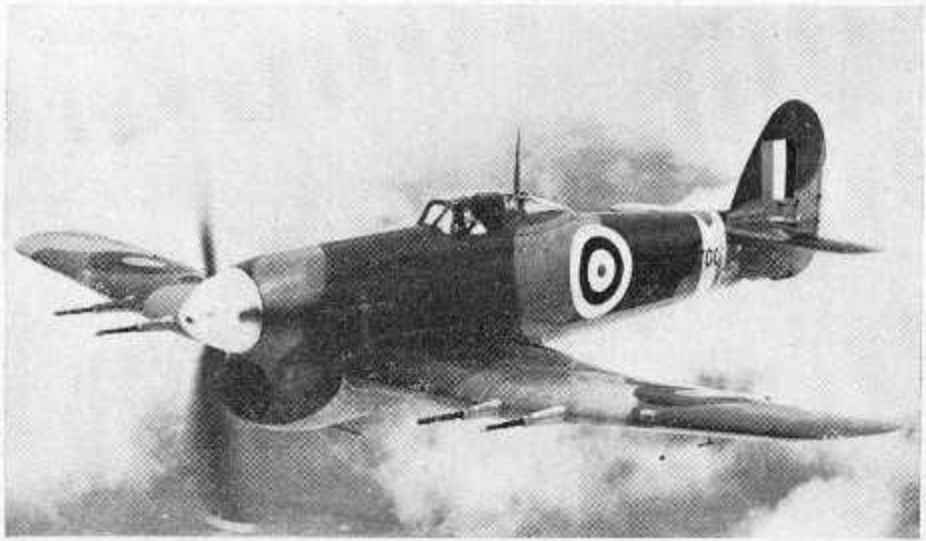
C



B



D

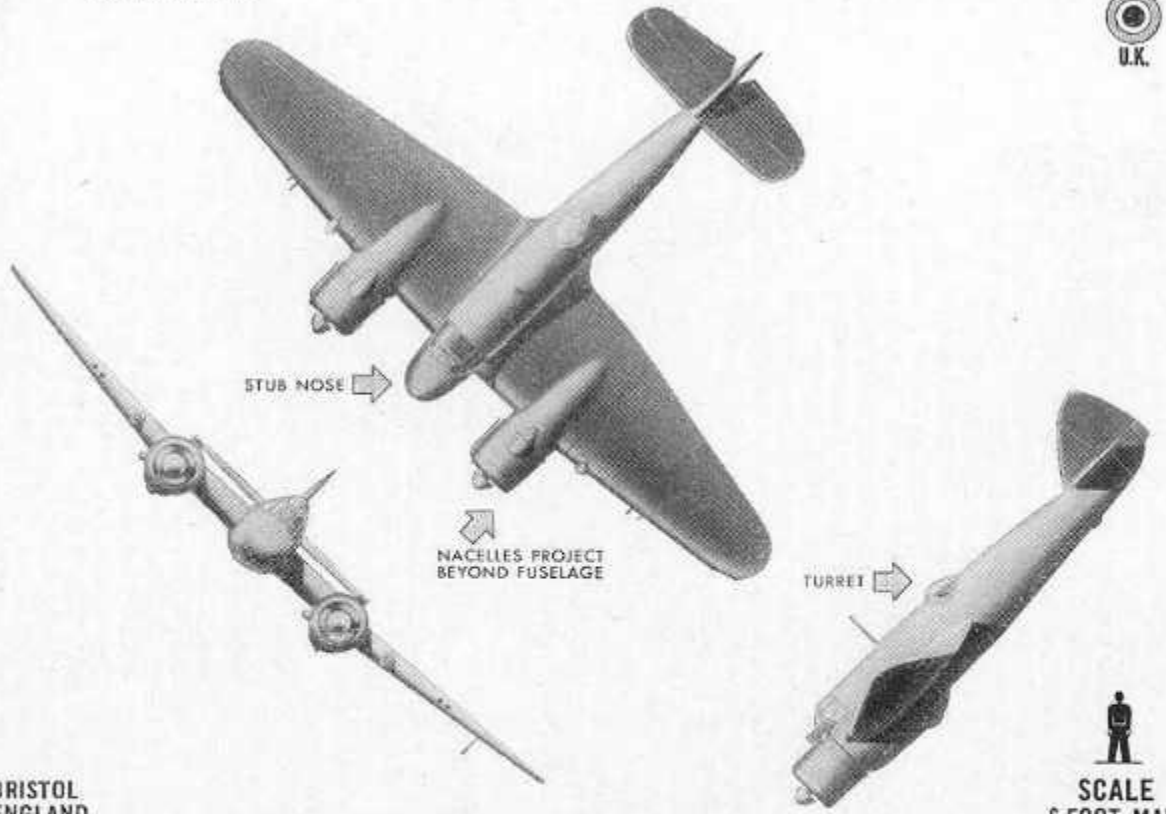


R. A. F.: BEAUFIGHTER I
BEAUFIGHTER I, II, VI

FIGHTER

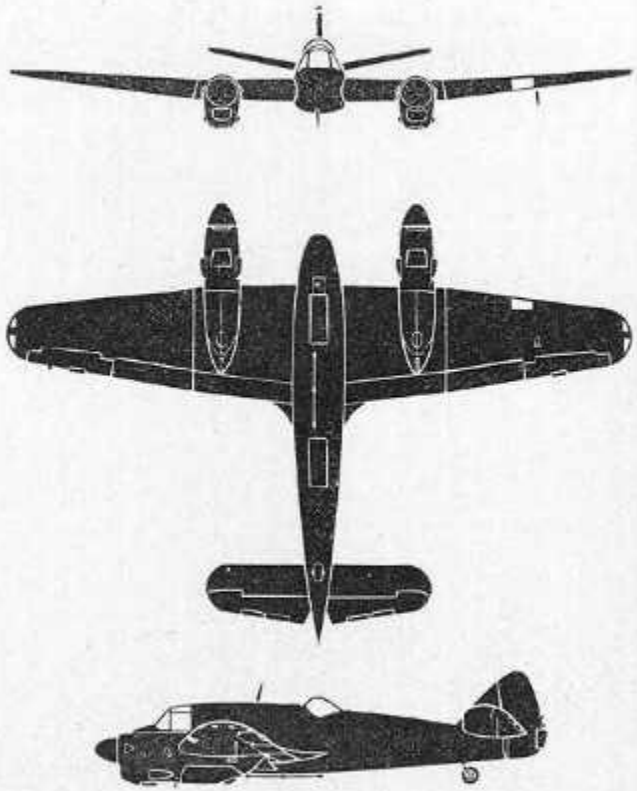
U.K.

"BEAUFIGHTER"



BRISTOL
ENGLAND

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Twin engine, mid-wing monoplane. Wing has equal taper in outer sections with wide flat center section and rounded tips. The twin radial engines protrude beyond the very short stubby nose. Fin and rudder are of the broad triangular Bristol type. Tail plane has marked dihedral with slight taper on trailing edge and V cut-out.

INTEREST: The Beaufighter was developed from the Beaufort bomber to fill the need for a heavily armed twin engine long range fighter. Although used principally as a night fighter, it rivals the Hurricane for versatility, being used also as a day fighter, a "tank buster," and with the British Coastal Command. It is well liked as a fighter and ground strafer in the Middle East. To counteract swing during take-offs, all Beaufighters are now fitted with a dihedral tail plane. The Beaufighter II has in-line instead of radial engines.

SPAN: 57 ft. 10 in.
LENGTH: 40 ft. 11 in.
MAX. SPEED: 323 m. p. h. at 14,400 ft.

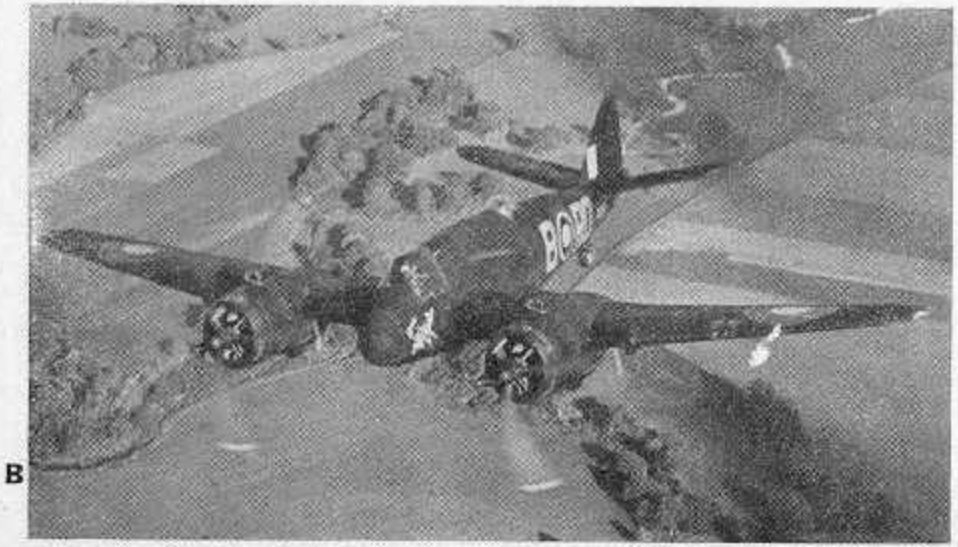
SERVICE CEILING:
29,700 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

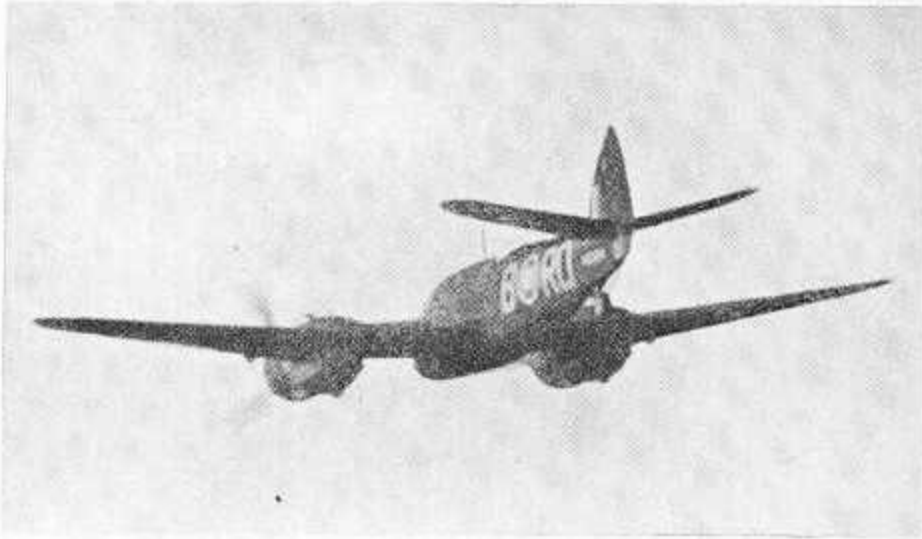
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

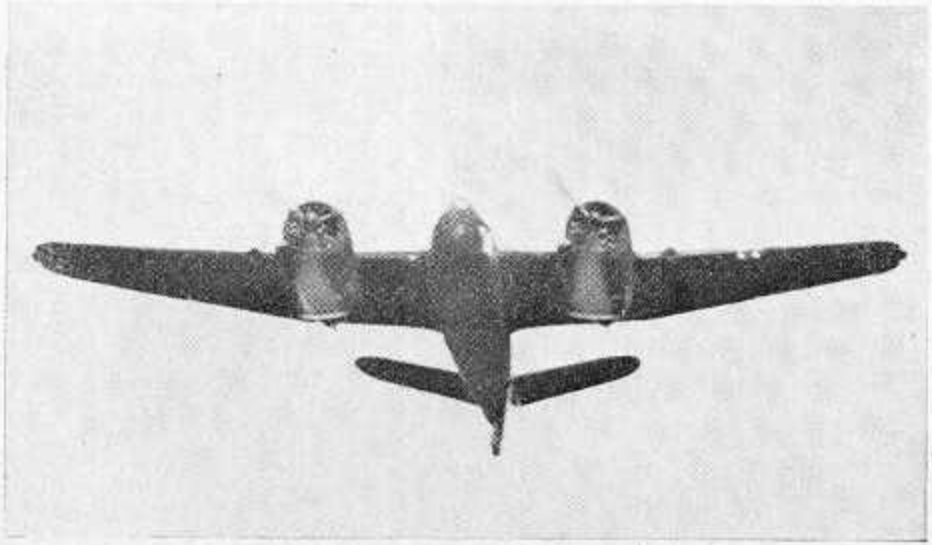
A



B



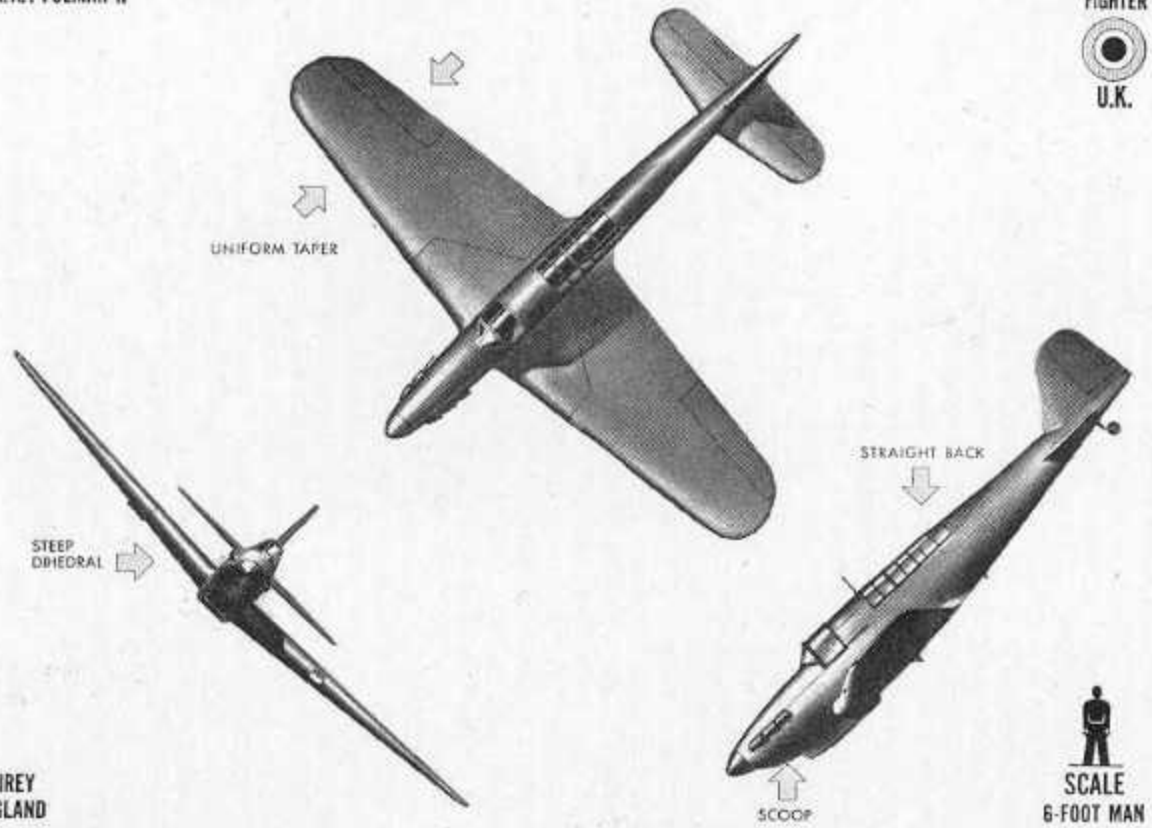
C



D

FIGHTER

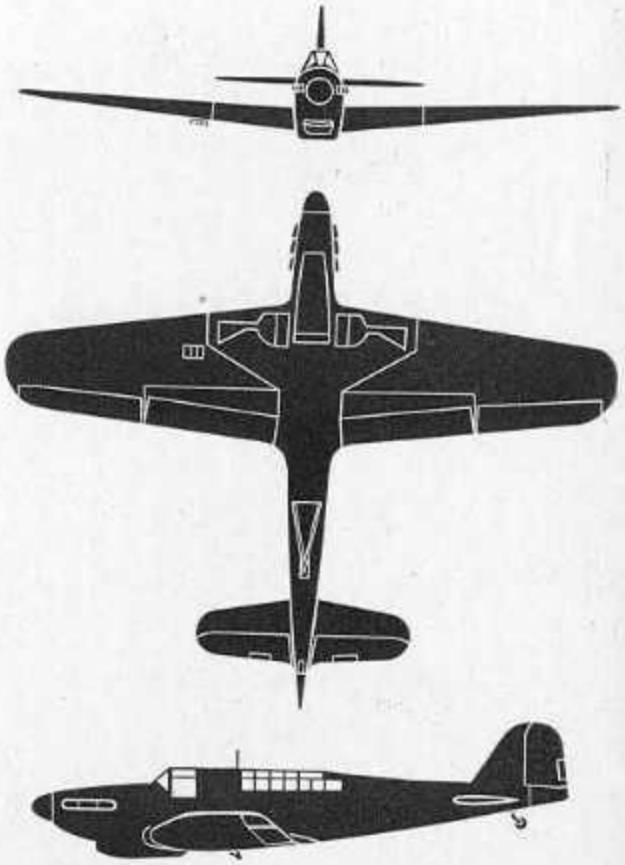
U.K.



SCALE
6-FOOT MAN

FAIREY
ENGLAND

FULMAR



DISTINGUISHING FEATURES: Low-wing monoplane with single inline engine. Wings are equi-tapered with rounded tips. Fuselage is long and narrow, with long cockpit canopy fairing into fuselage. Airscoop beneath nose. Wide fin and rudder with pronounced taper on leading edge. Tailplane sets low and well forward on the fuselage and is similar in shape to wing.

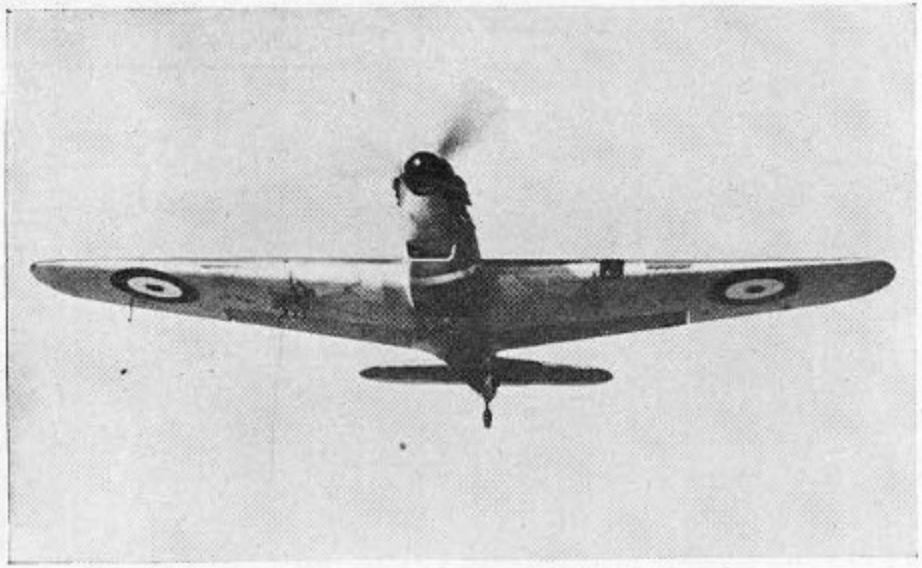
INTEREST: An eight-gun carrier-based fighter of the British Fleet Air Arm, the Fulmar has a greater range than many land fighters with similar armament. This is an important advantage, since frequent landings on carriers for purposes of refueling are a distinct nuisance. Although this plane is now obsolescent, it has done good work in the Mediterranean in clashes with Italian planes.

SPAN: 46 ft.
LENGTH: 40 ft. 4 in.
APPROX. SPEED: 250 m. p. h. at 10,000 ft.
SERVICE CEILING: 23,000 ft.

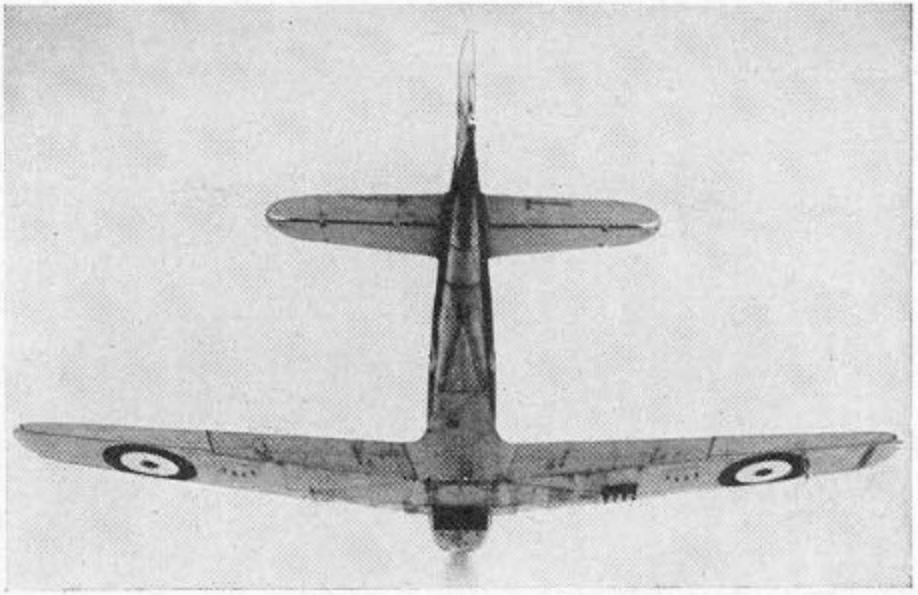
NOV. 1943
FROM DATA CURRENTLY AVAILABLE

RESTRICTED

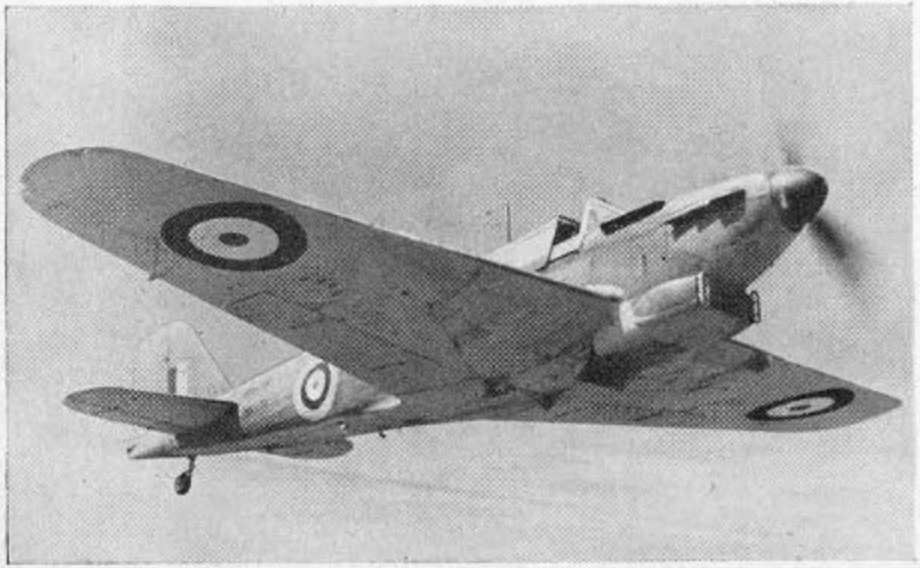
A



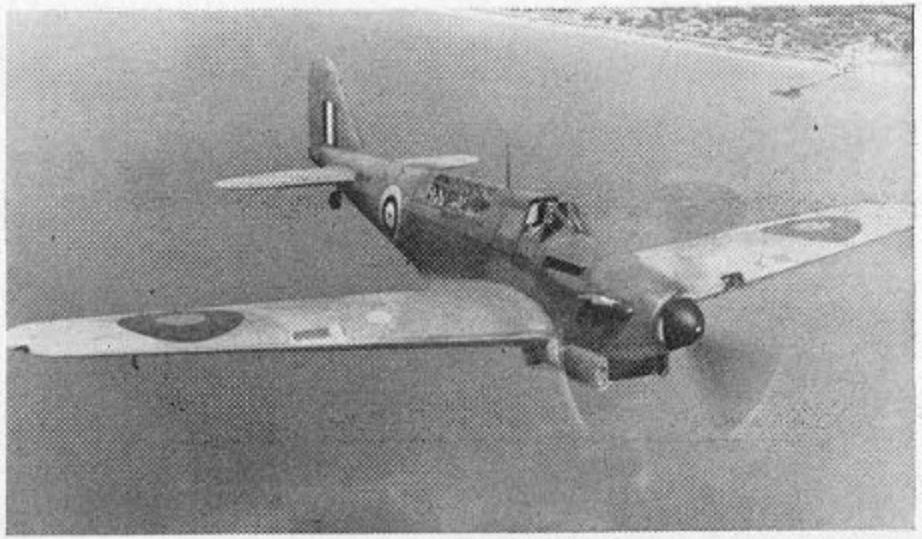
C



B



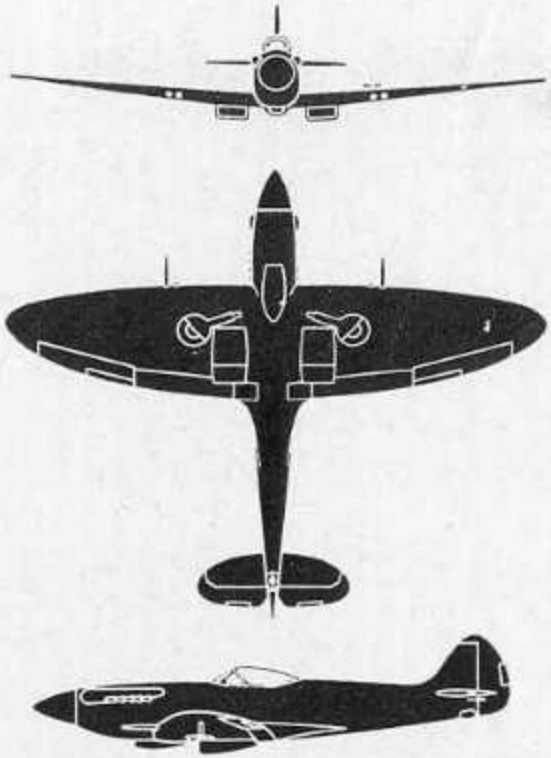
D



FIGHTER

U. K.

SPITFIRE XIV



R. A. F.
SUPERMARINE
ENGLAND

DISTINGUISHING FEATURES: The characteristic elliptical wing outline remains in all marks of Spitfire in spite of changes in wing-tip shape from the very pointed Mark VIII to the square-cut Mark XII. The radiator position and shapes are of value in the head-on view and are important on all marks. The fin and rudder has undergone many modifications and is no longer a reliable recognition feature.

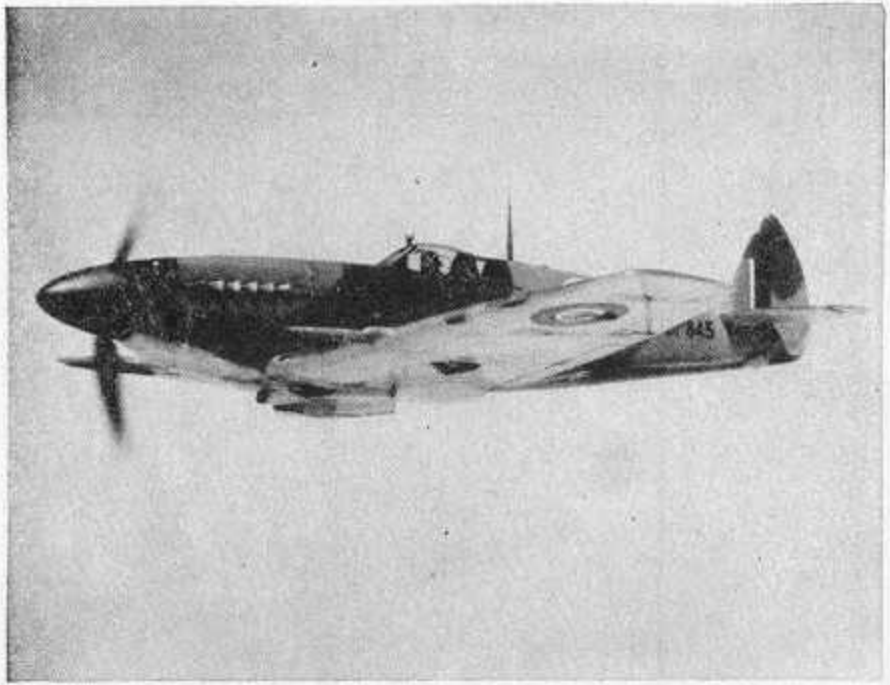
INTEREST: The "Spit" has played the greatest part of any R.A.F. fighter. Its modifications and new power units have always given it the edge over its enemies. Today it holds its position as one of the finest fighters in the world, despite the fact that the original design was accepted by the Air Ministry as long ago as 1934. The Spitfire XI with long-range tanks in the leading edge of the wing and no armament is the standard photo-reconnaissance aircraft of the R.A.F. Photographs A and C are of Mark XII; photograph B shows Mark XIV.

SPAN: 36 ft. 10 in.
LENGTH: 32 ft. 8 in.
MAX. SPEED:

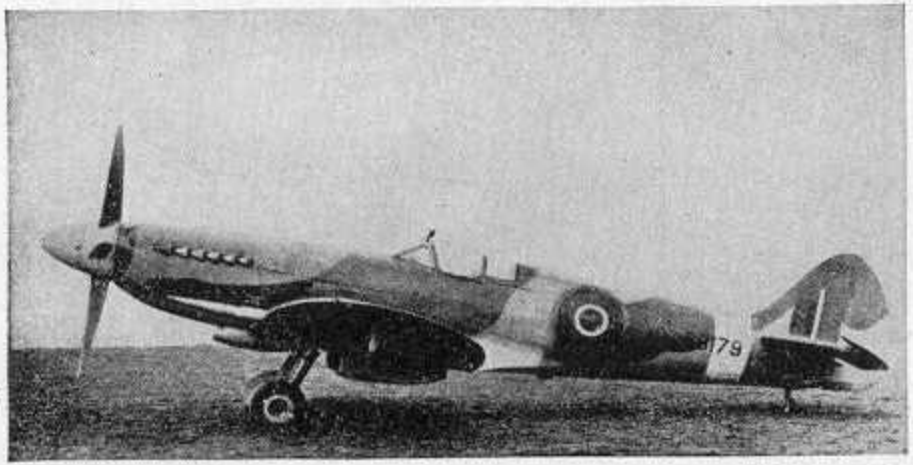
SERVICE CEILING:

RESTRICTED

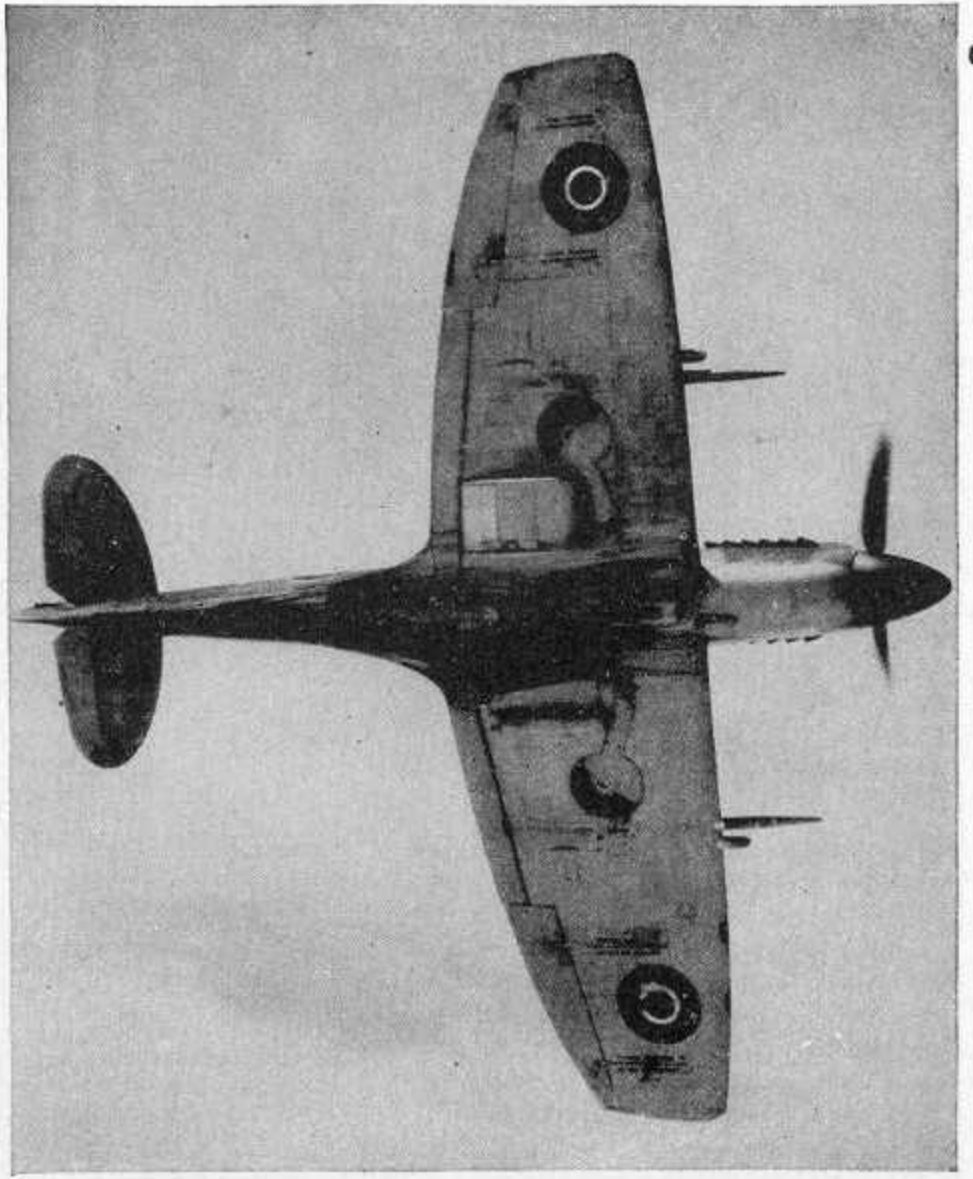
A



B



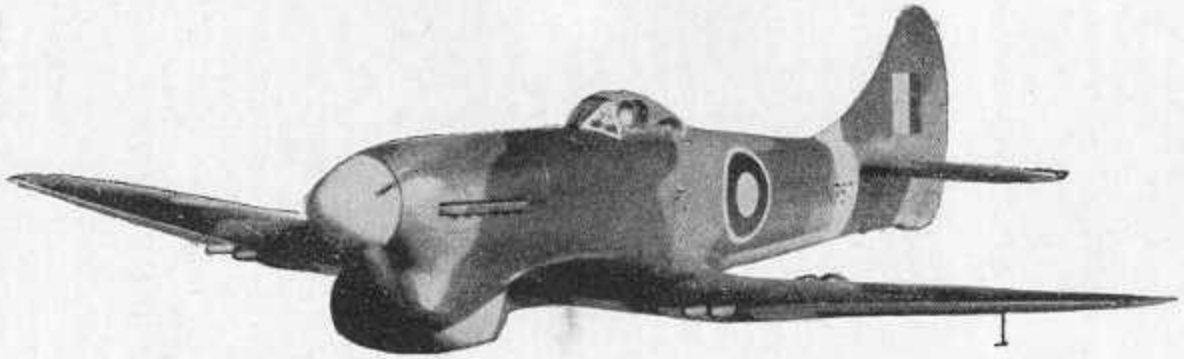
C



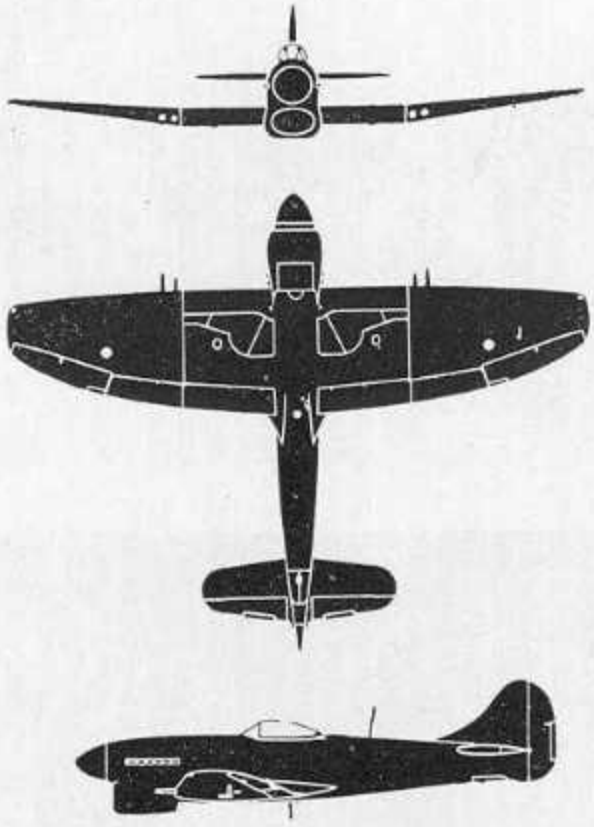
FIGHTER

U. K.

TEMPEST V



R. A. F.
HAWKER
ENGLAND



DISTINGUISHING FEATURES: A low-wing design but in the head-on view will often appear mid-wing because of the underslung radiator. The heavy nose effect created by the radiator sometimes makes the Tempest V appear to have a radial engine. The wing with its straight leading and elliptical trailing edges is distinctive. The fin is faired into the fuselage by a long fairing, an important recognition point on a single engine fighter.

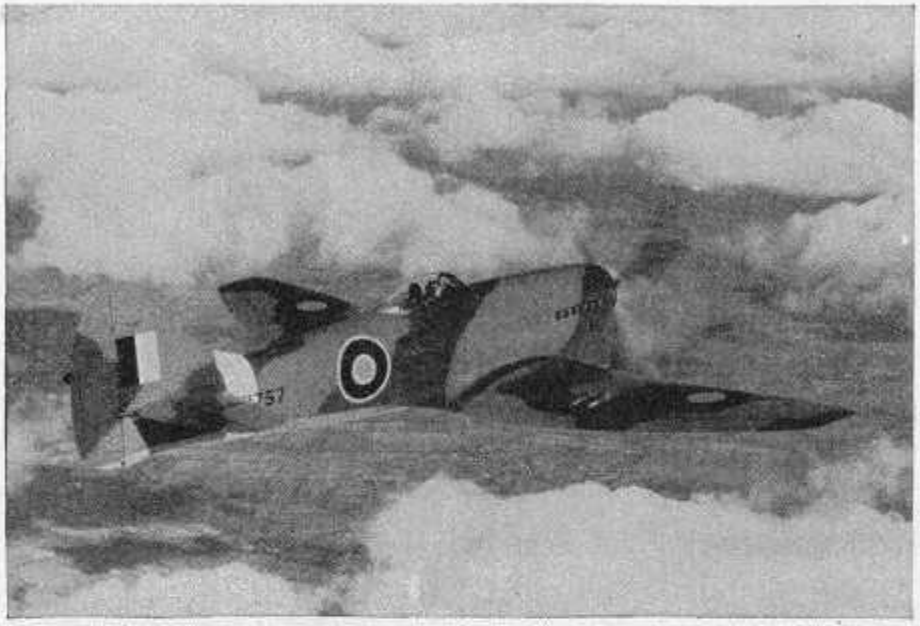
INTEREST: The Mark V was the first of the Hawker-Tempest aircraft to become operational. The design shows clearly its development from the Typhoon, the fuselage and engine mounting being identical except for an extra compartment between engine and pilot. The tail unit is modified from that of the Typhoon and only the wing is radically new although the whole aircraft has been cleaned up. Like the Typhoon the Tempest V is powered by the 24 cylinder "H" type Napier "Sabre" engine.

SPAN: 41 ft. 0 in.
LENGTH: 33 ft. 8 in.
MAX. SPEED:

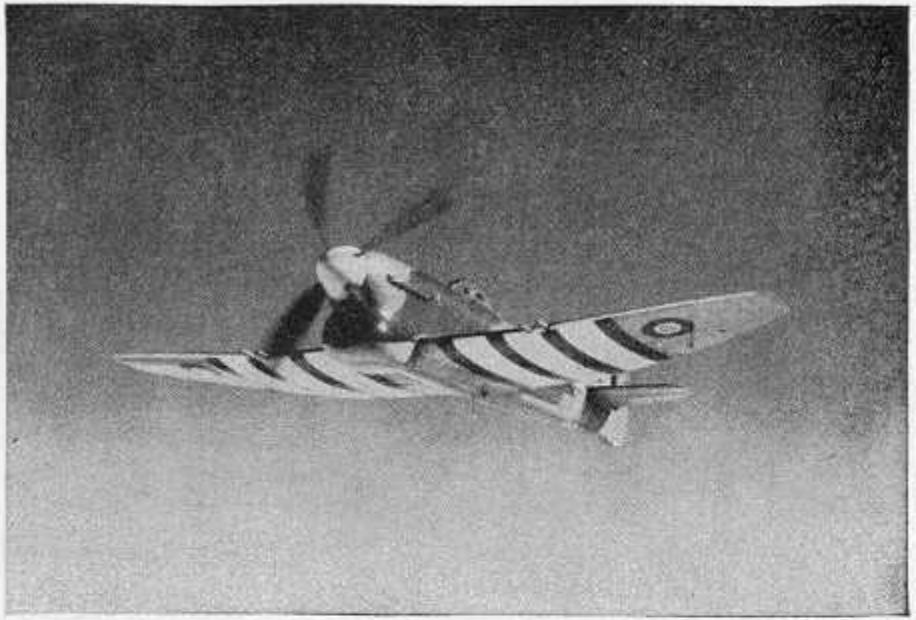
SERVICE CEILING:

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

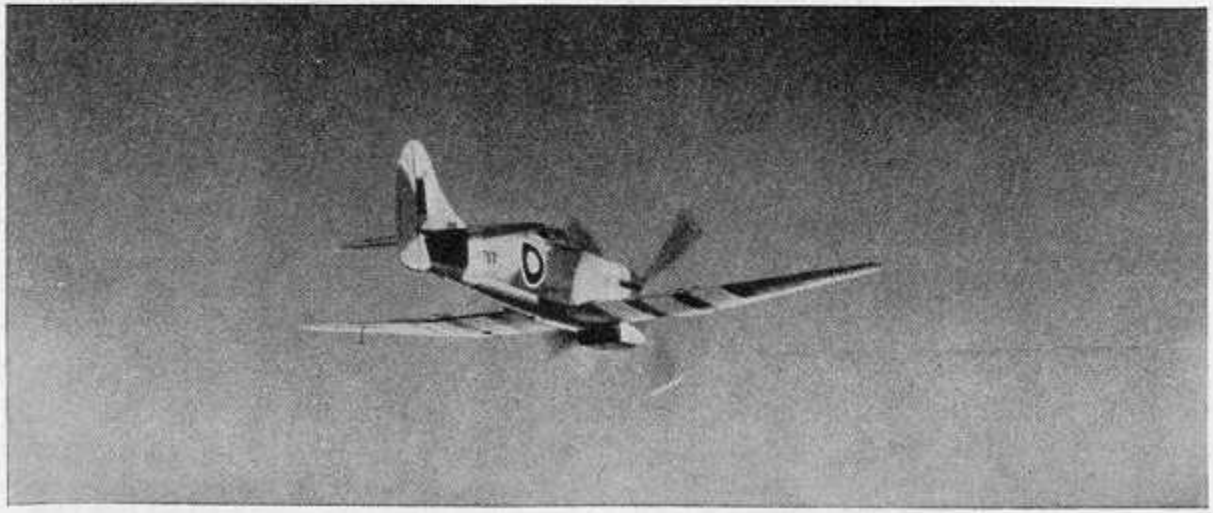
RESTRICTED



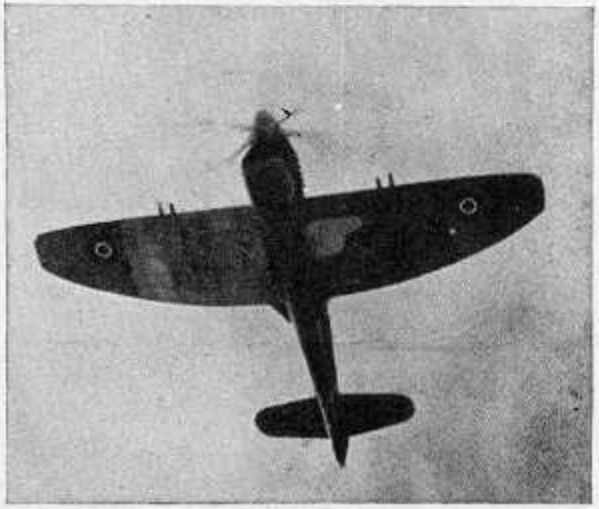
A



C



B



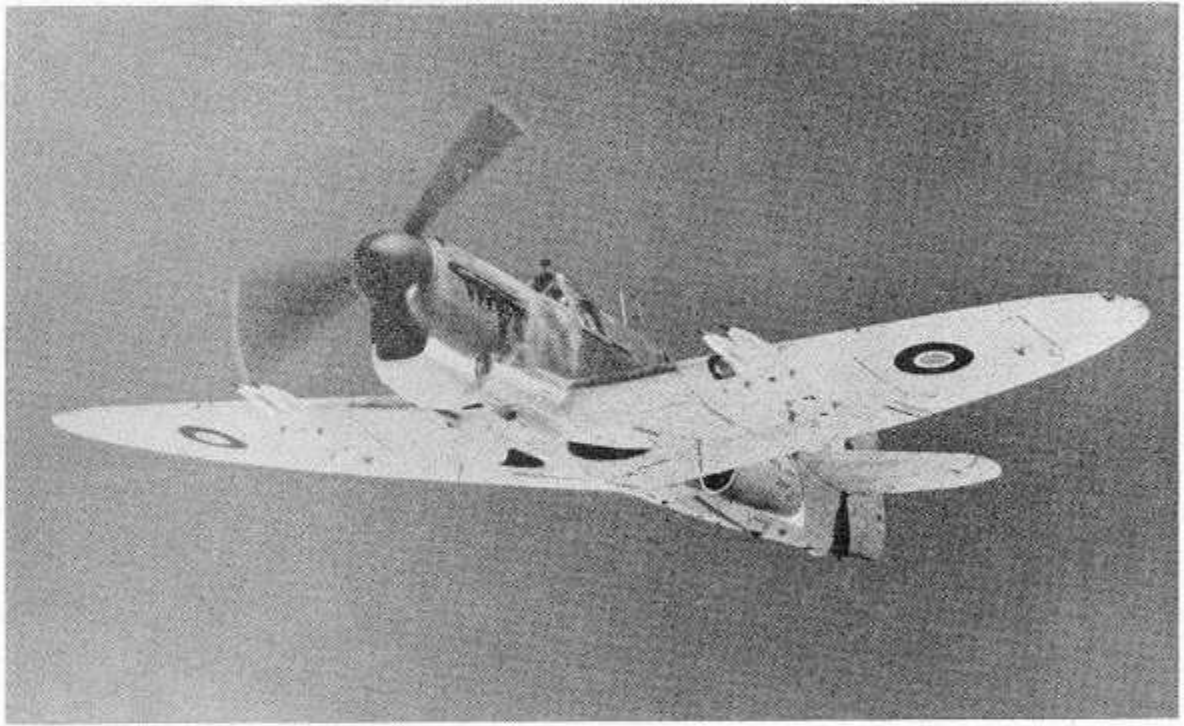
D

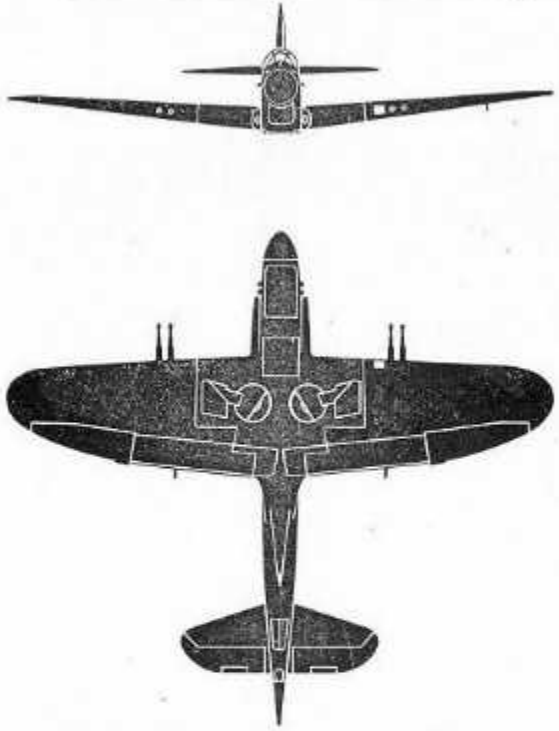
ROYAL NAVY
FAIREY
ENGLAND

FIGHTER

U. K.

FIREFLY





DISTINGUISHING FEATURES: Single-engine, low-wing monoplane. Wing has tapered leading edge, curved trailing edge, and rounded tips. The thick wing has dihedral from the roots. Nose has large spinner with deep scoop beneath. Fuselage is deep and thickset with observation greenhouse separated from bulged cockpit. Fin and rudder appear triangular. Broad tailplane, set forward of rudder, tapers sharply on leading edge and has heavily raked tips.

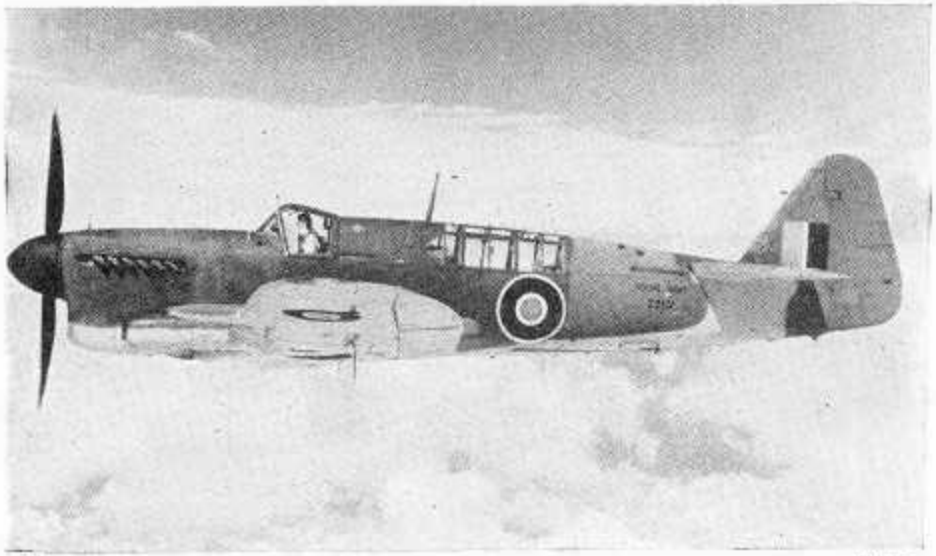
INTEREST: The Firefly is Britain's new carrier-based, multipurpose fighter. It is in service as a night fighter, long-range fighter, and reconnaissance aircraft. This two-seater aircraft is powered by a Rolls-Royce Griffon engine and mounts two 20-mm cannon in each wing making it the most heavily armed ship-borne fighter in the world.

SPAN: 44 ft. 6 in. **SERVICE CEILING:**
LENGTH: 37 ft. 7 in.
APPROX. MAX. SPEED:

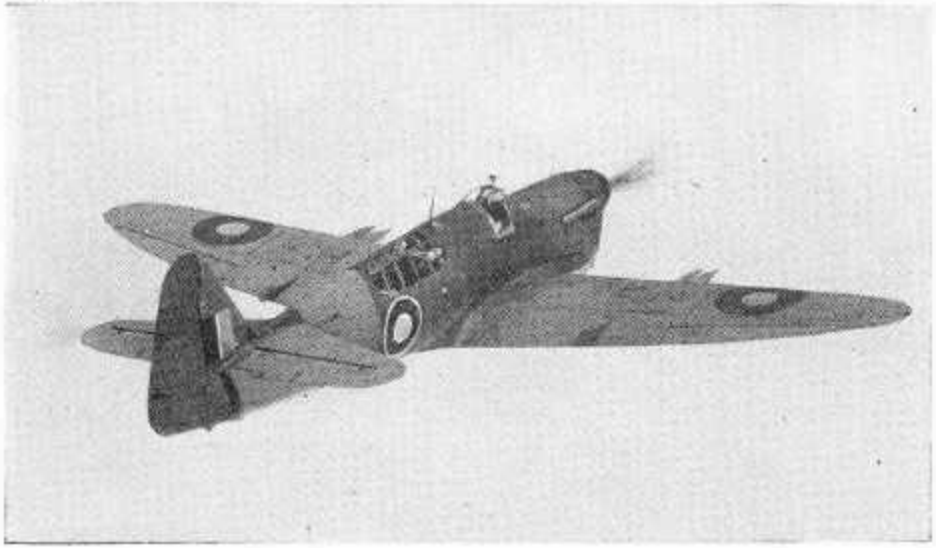
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

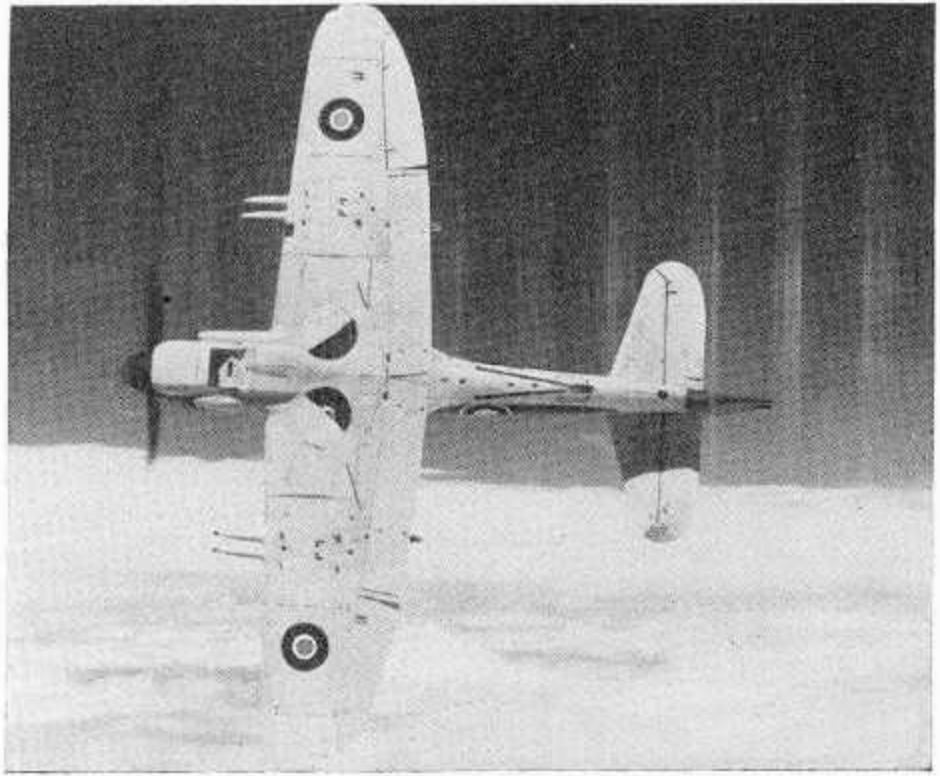
RESTRICTED



A ▲ B ▼



C ▲ D ▼

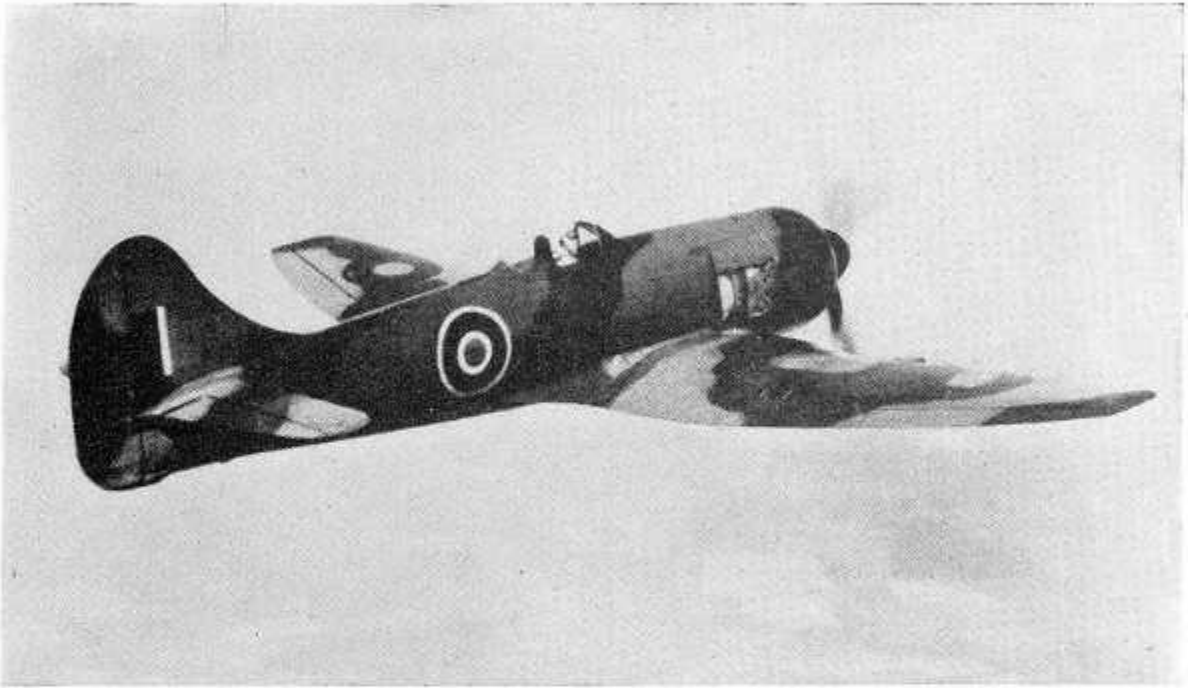


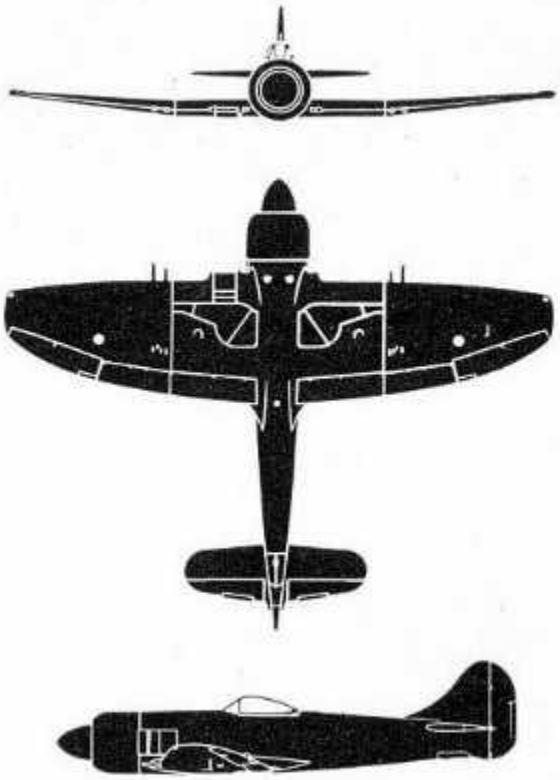
RAF
HAWKER
ENGLAND

FIGHTER

U. K.

TEMPEST II





DISTINGUISHING FEATURES: The Tempest II is a single-engine, low-wing monoplane. Wing has no dihedral in inboard panels. Semielliptical wing has blunt tips and leading edge is broken by air intake projections on each side of the fuselage. Round nose with large spinner. Long trim fuselage has bubble-type canopy. Rounded fin and rudder fairs forward in a shallow curve. Rudder projects slightly below fuselage line. Tailplane has moderate taper with rounded tips.

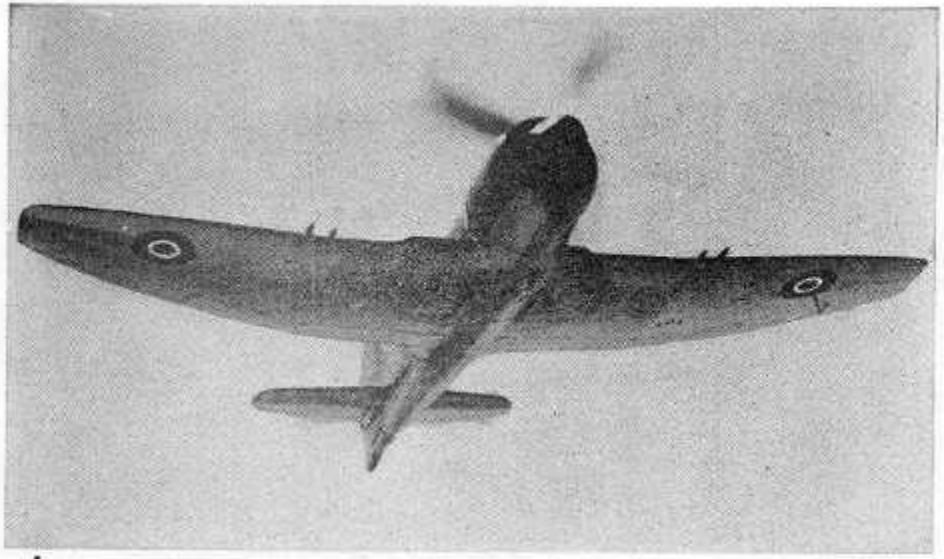
INTEREST: The Tempest II is a radial engined version of the earlier Tempest V. It is the first RAF single-engine fighter to go into service with an air-cooled engine since the Gladiator biplanes went out in 1940. The Bristol Centaurus engine used in the Tempest II closely matches the power of the Napier Sabre and Rolls-Royce Griffon in-line engines. Four 20-mm cannon are mounted in the wings.

SPAN: 41 ft. **SERVICE CEILING:**
LENGTH: 34 ft. 6 in.
APPROX. MAX. SPEED:

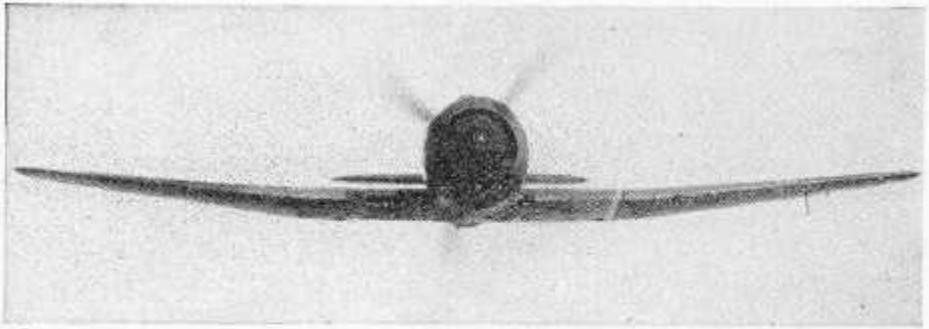
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

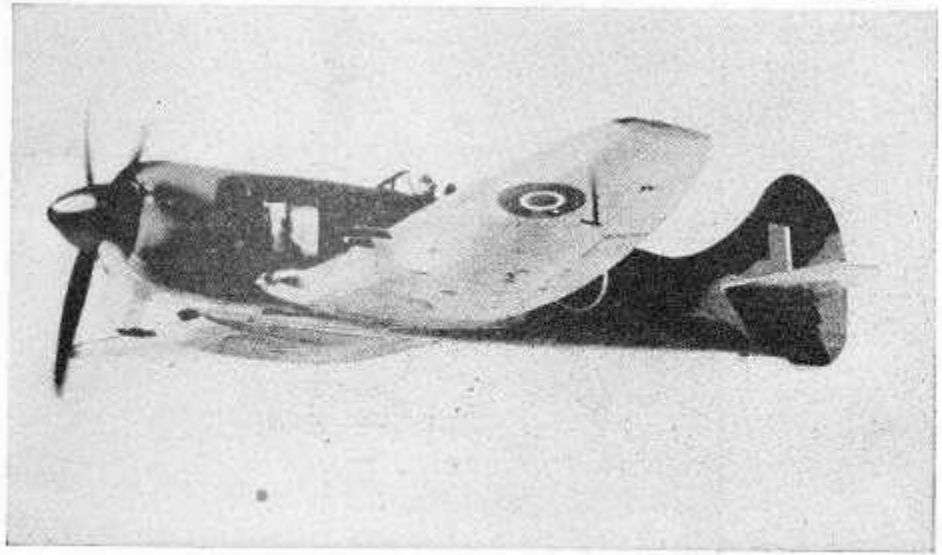
RESTRICTED

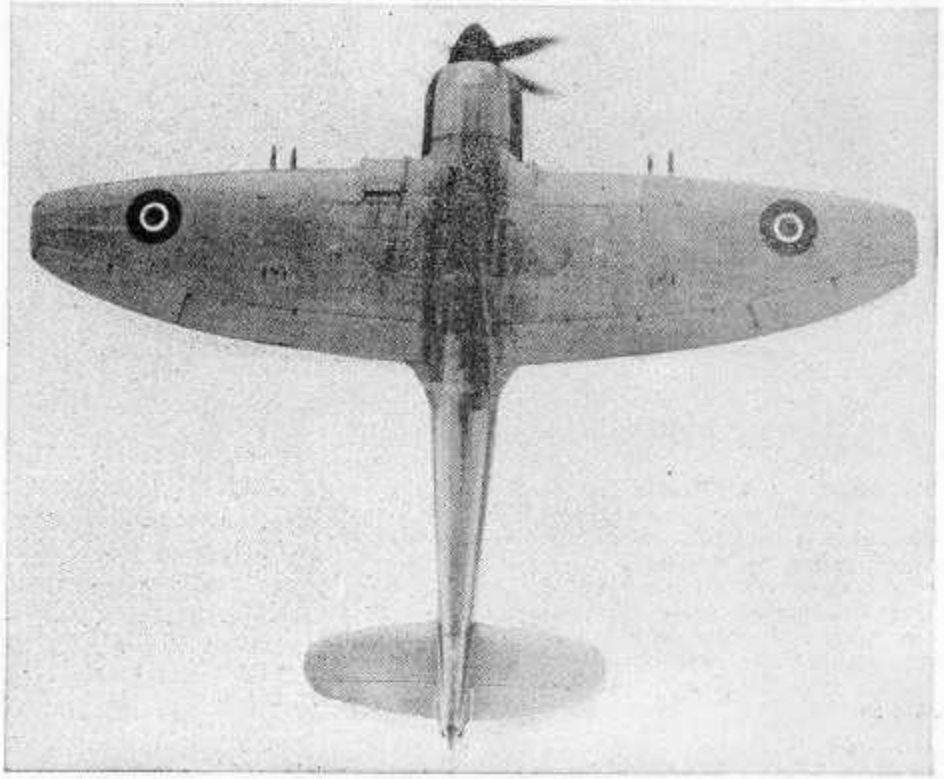


A ▲ B ▼



C ▲ D ▼



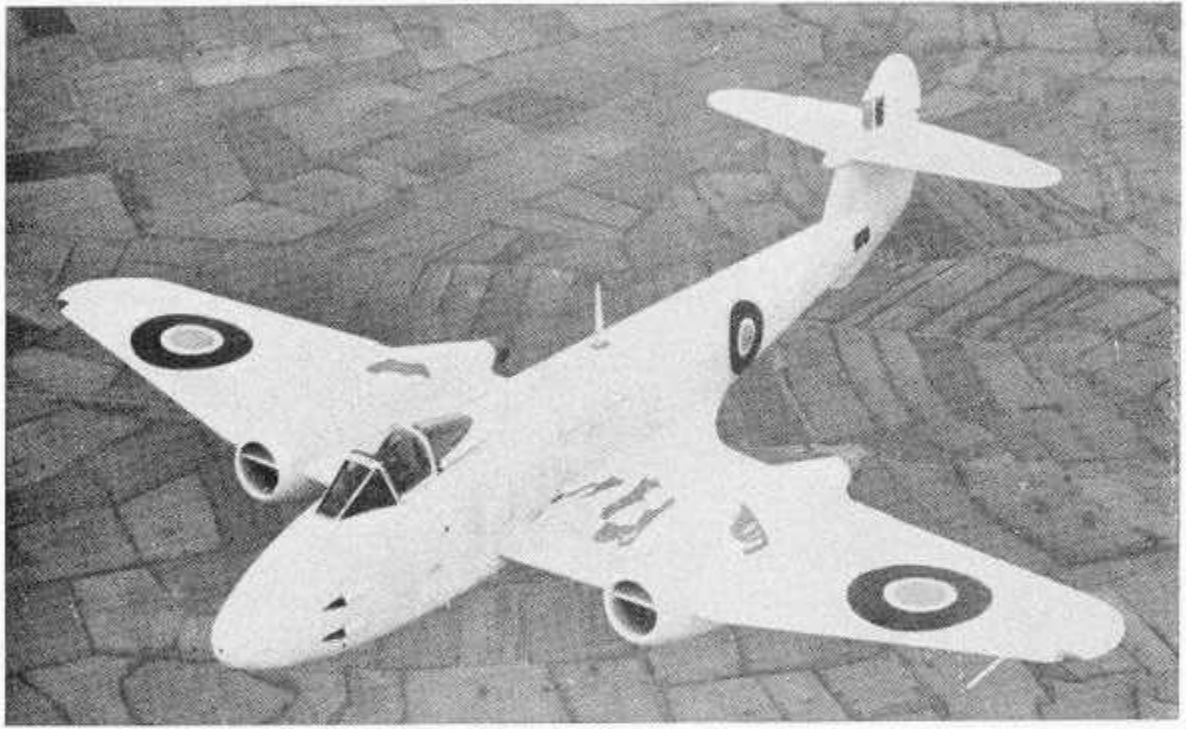


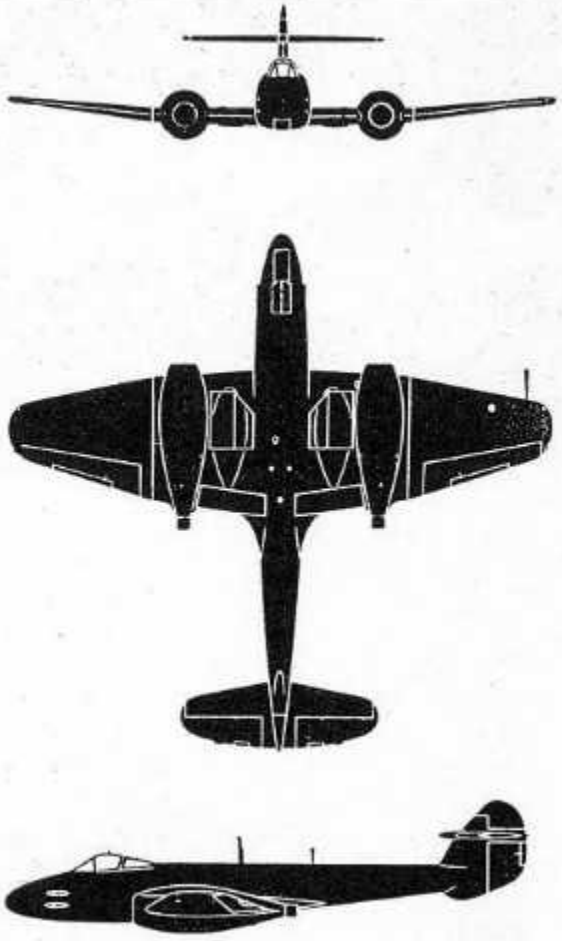
RAF
GLOSTER
ENGLAND

FIGHTER

U. K.

METEOR





DISTINGUISHING FEATURES: Low-wing monoplane with twin jet units and single fin and rudder. Very slim fuselage with small projecting cockpit set forward. Oddly shaped fin and rudder projects beneath fuselage in sweeping curve. Tailplane set high on fin and rudder. Very broad wing tapered more in outer panels than in inboard panel. Jet units mounted centrally in wing and project slightly fore and aft.

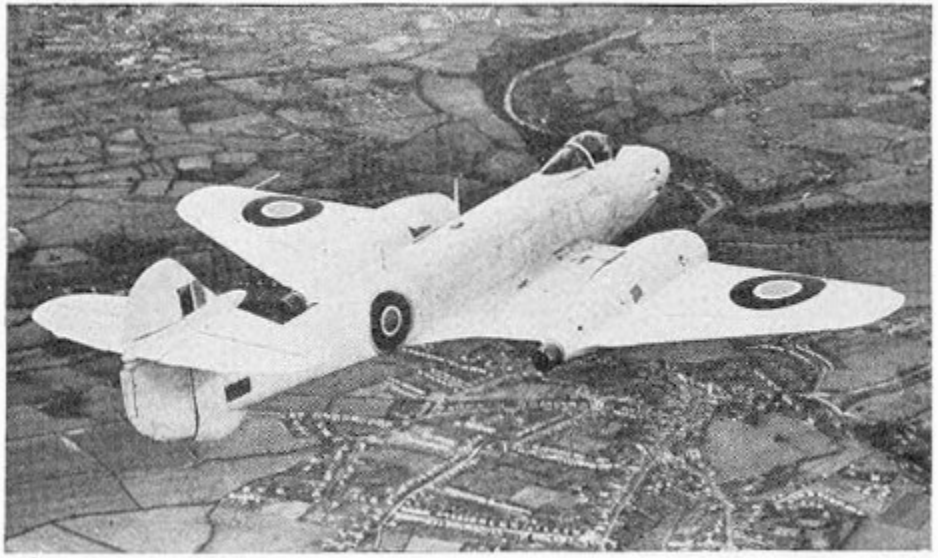
INTEREST: The Gloster Meteor was the first jet propelled aircraft to go into action for the Allies. It was first employed by an RAF squadron against the robot bombs on 4 August 1944 and downed a substantial number. Made by Gloster Aircraft Corporation, it is powered by Rolls-Royce turbo-jet engines. The Meteor has a top speed superior to that of the flying bomb. Its propulsion units burn kerosene.

SPAN: 43 ft. **SERVICE CEILING:**
LENGTH: 42 ft. 9 in.
APPROX. MAX. SPEED:

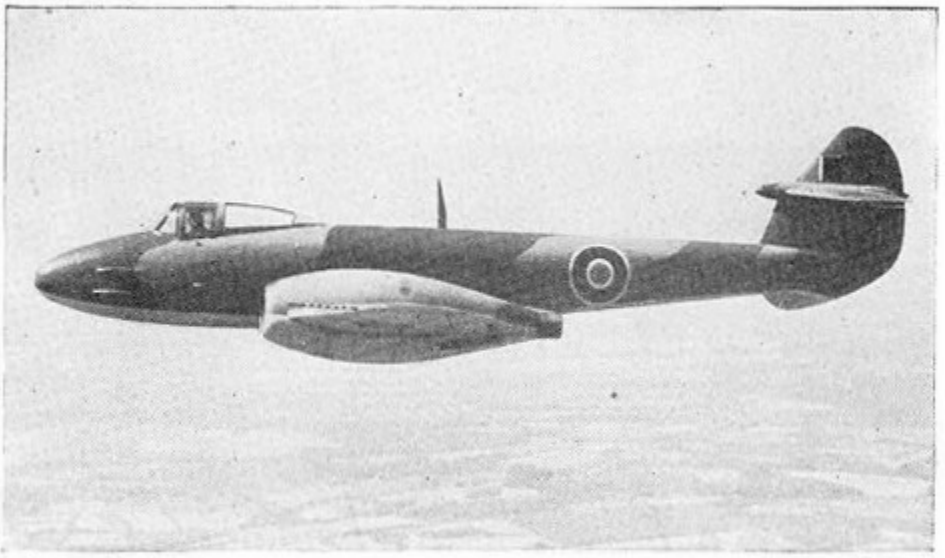
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

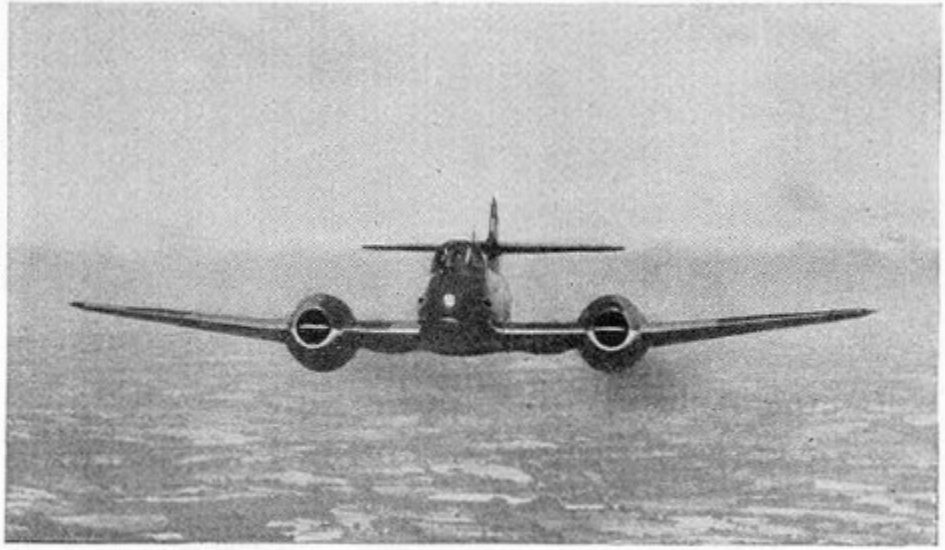
RESTRICTED

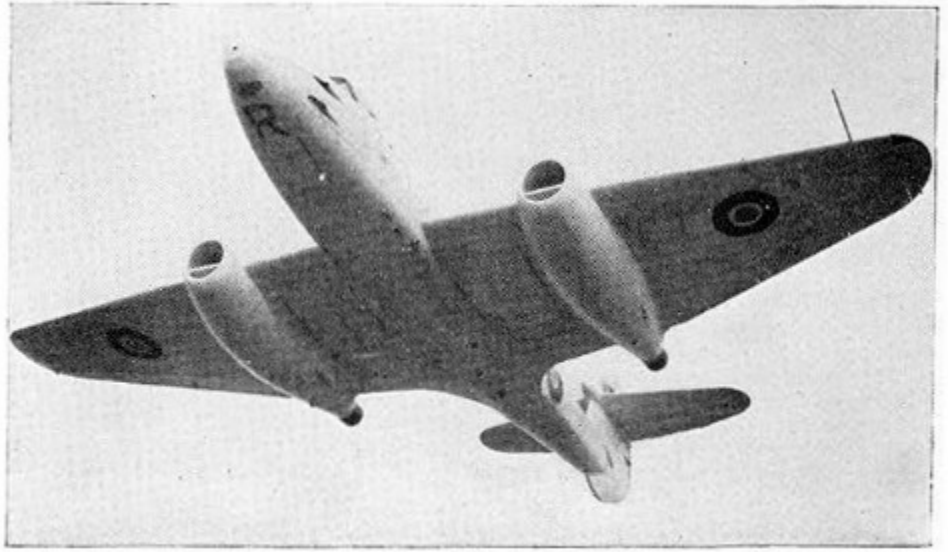


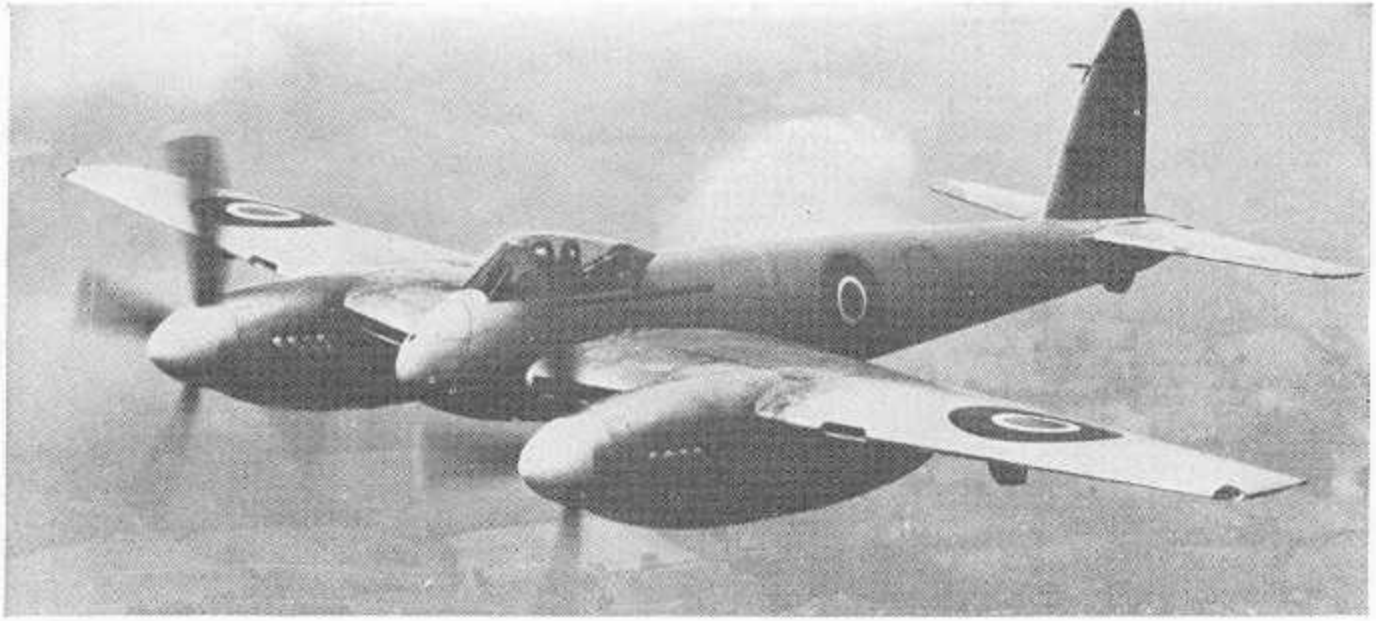
A ▲ B ▼



C ▲ D ▼

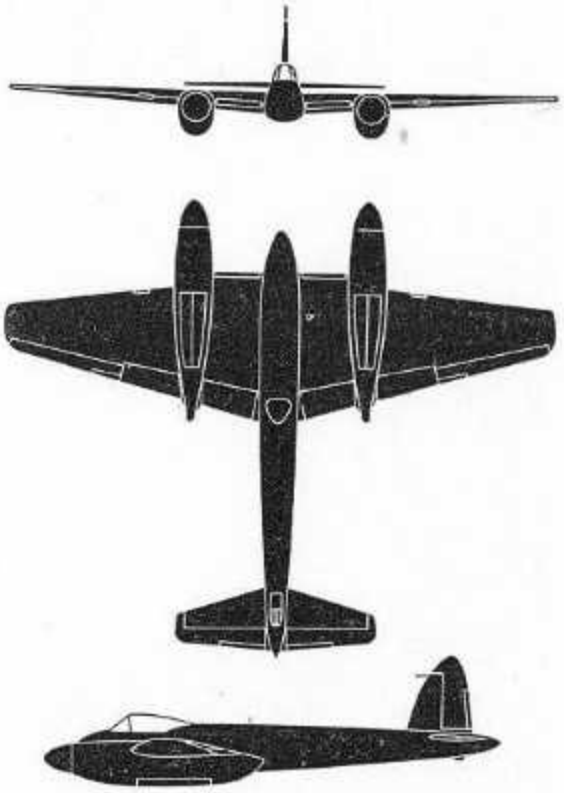






HORNET

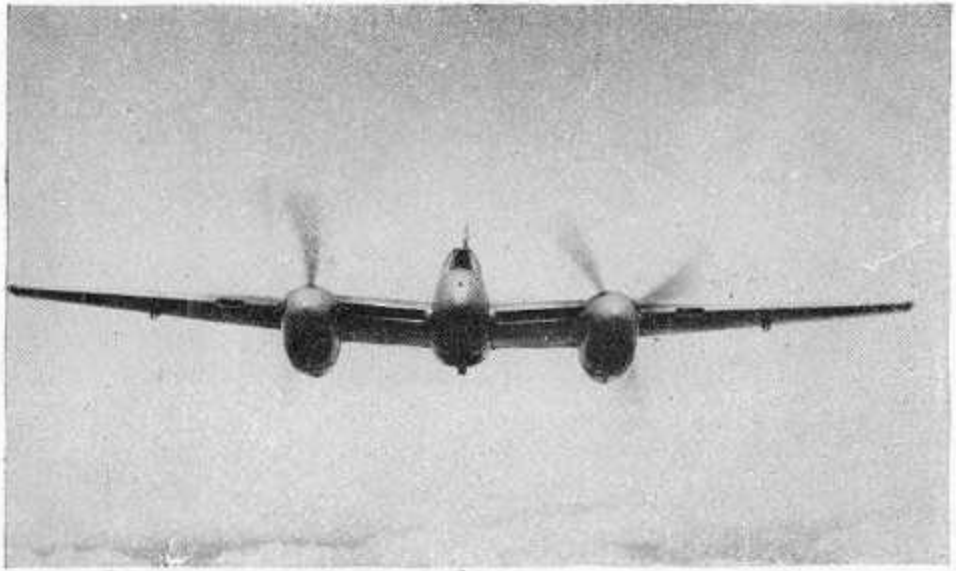
UNITED KINGDOM

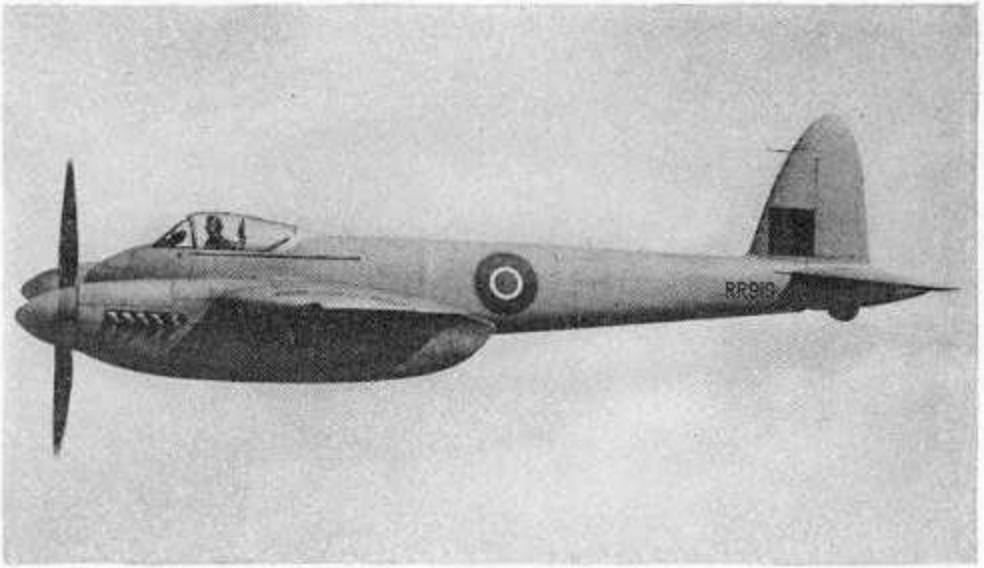


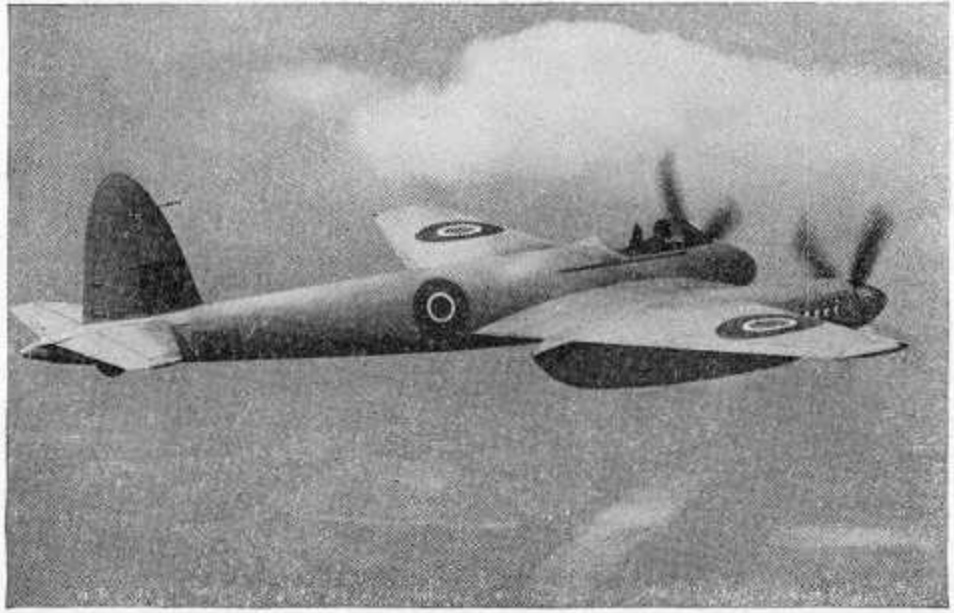
INFORMATION The Hornet is a scaled down version of the Mosquito. It was designed for use as a single seat, long range, medium altitude fighter, an unarmed reconnaissance plane, or as a fighter bomber. Constructed of plywood and light alloys, the Hornet has a Rolls Royce Merlin 130 engine in the starboard nacelle and a Merlin 131 in the port nacelle. This gives opposite rotation to the propellers and facilitates handling in take-offs or landings. A sea version has successfully made carrier landings. The range listed is with two 200 gallon drop tanks installed.

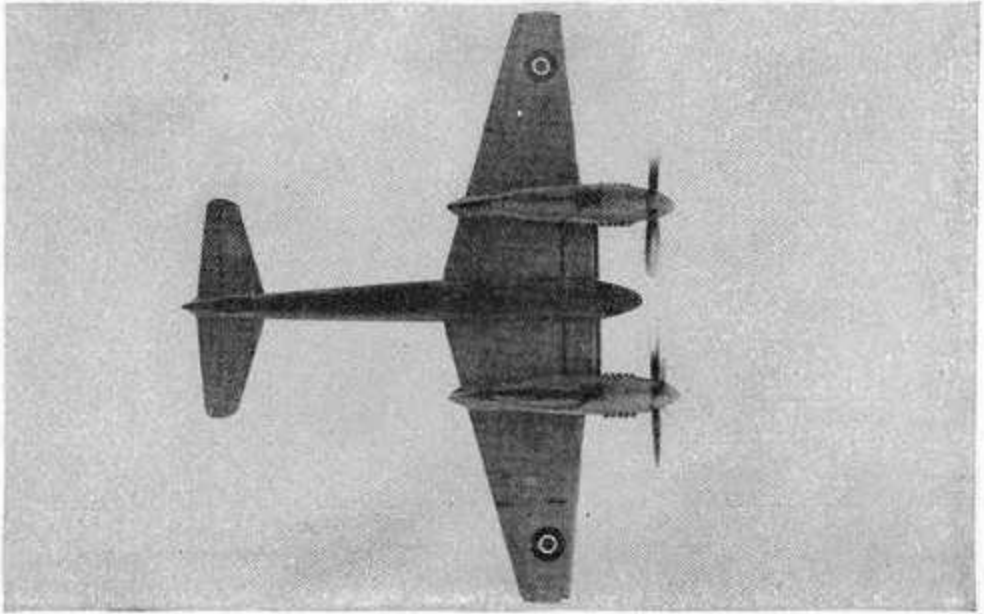
DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
45′–0″	37′–0″	16,000	over 470	4,650	35,000	3,000

APRIL 1946 **RESTRICTED**



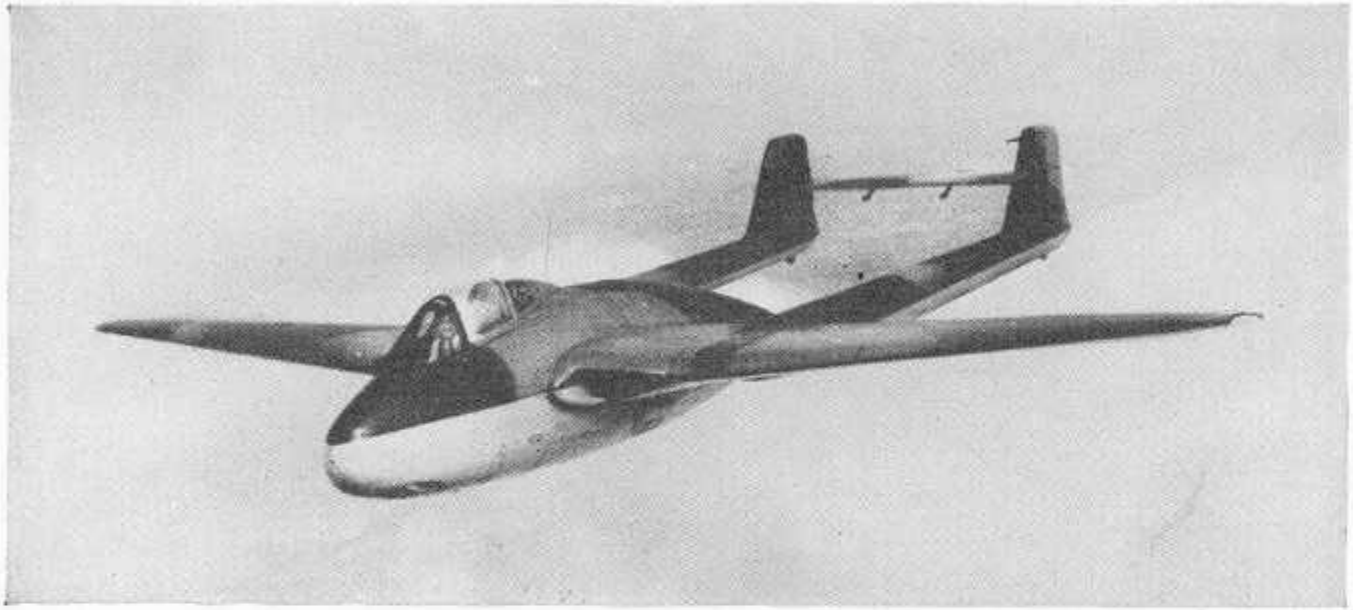


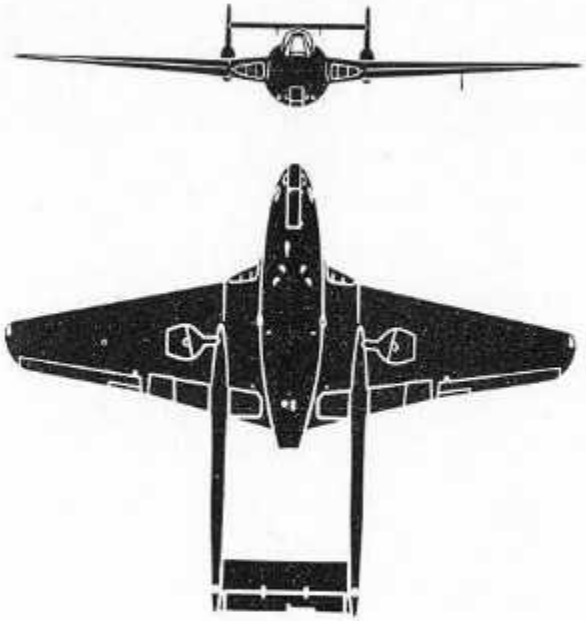




VAMPIRE

UNITED KINGDOM

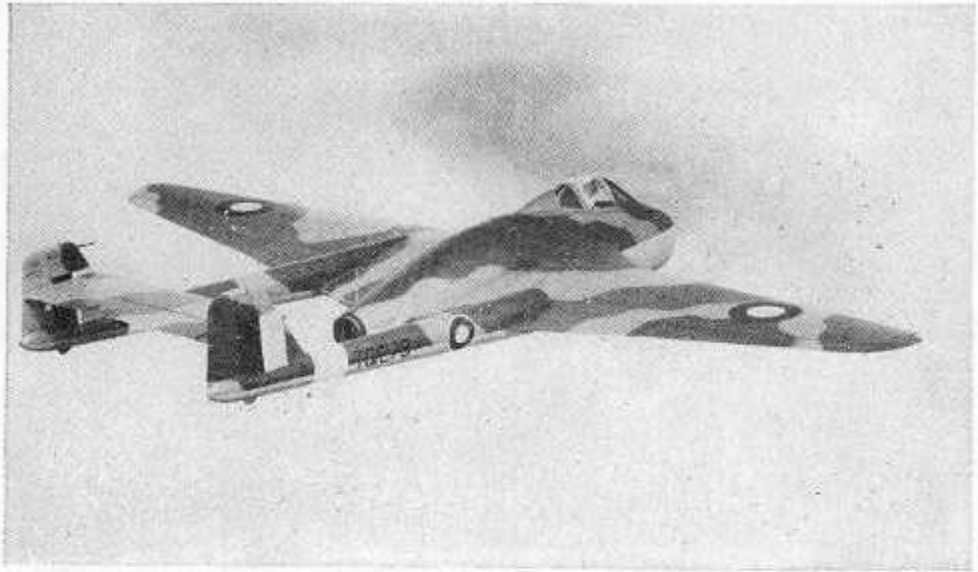


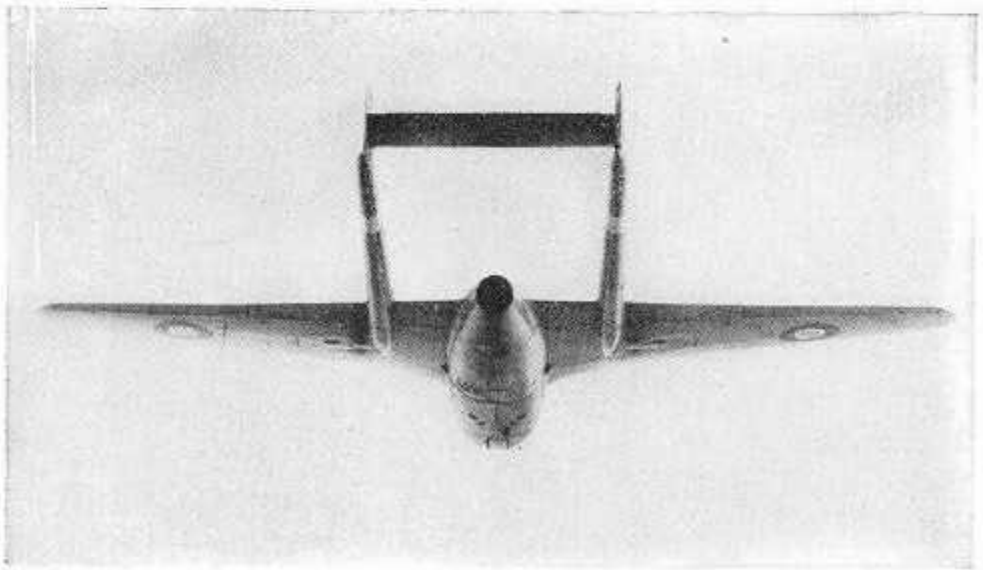


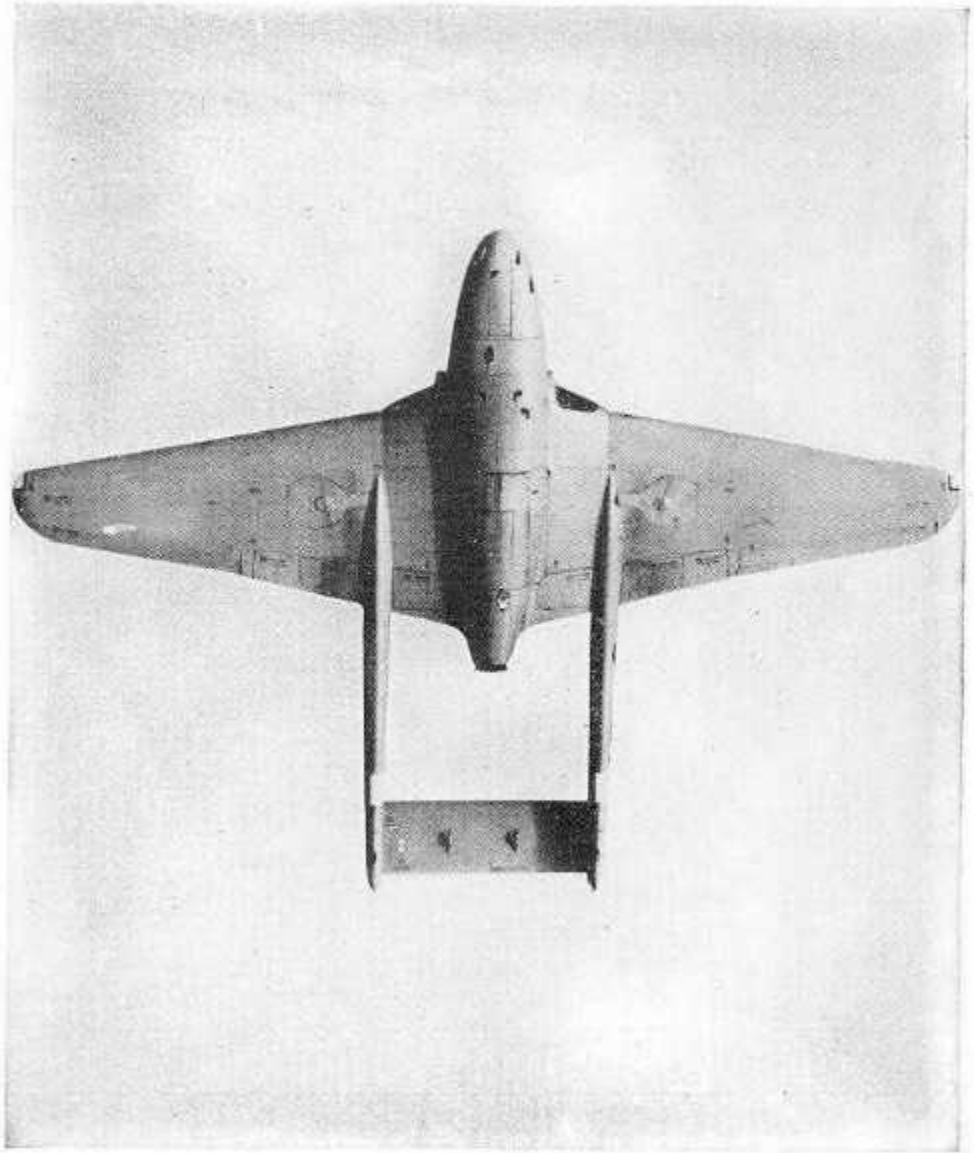
INFORMATION The Vampire is a high speed jet fighter built by De Havilland. Powered with a D.H. Goblin I jet unit its maximum speed is reported to be 540 m.p.h. It carries 4–20mm fixed guns as armament. The Vampire is fitted with dive brakes and a tricycle landing gear. It has been successfully tested in carrier landings. It has a range of 680 miles at 400 m.p.h.

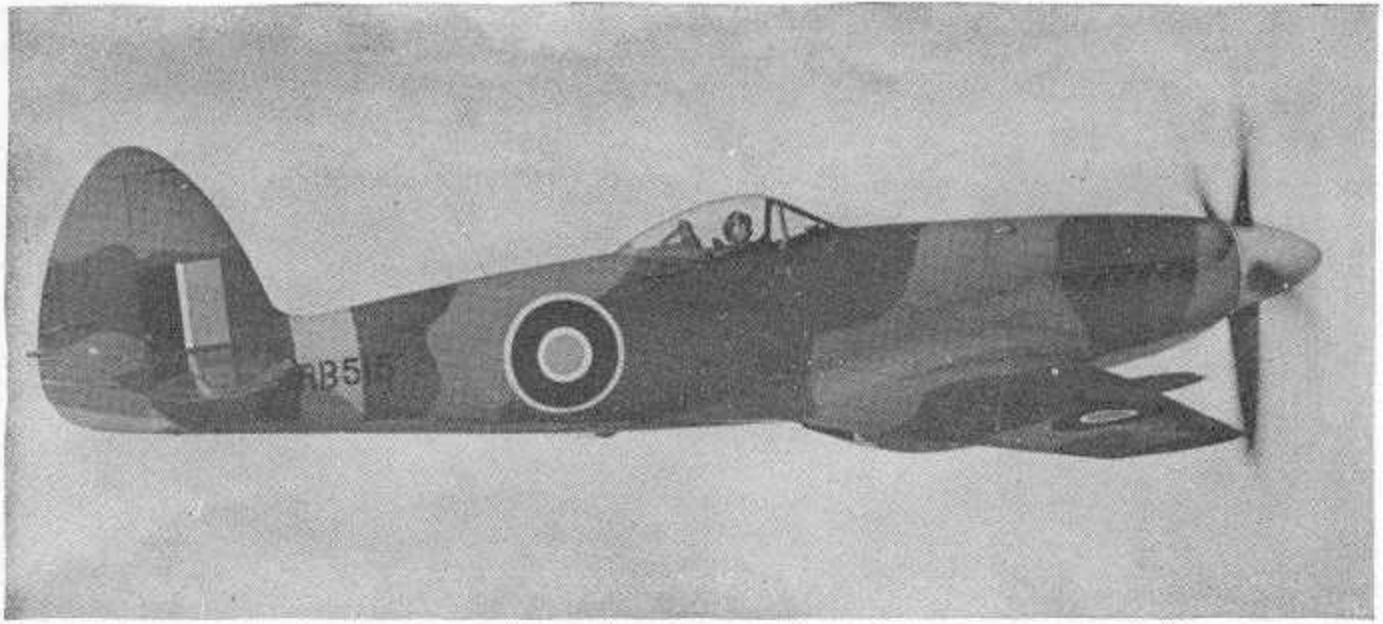
DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.–ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
44'–0"	30'–9"	10,298	540/sl	initial 4,200		see above

APRIL 1946 RESTRICTED



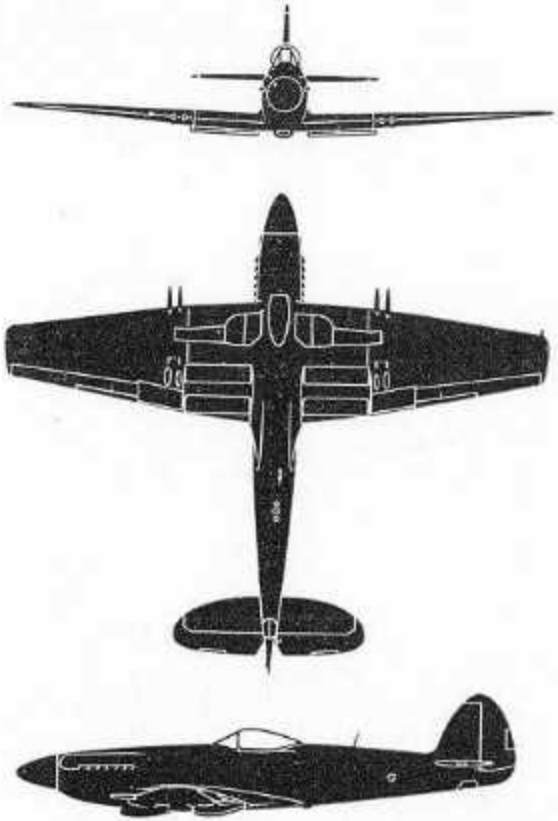






SPITEFUL

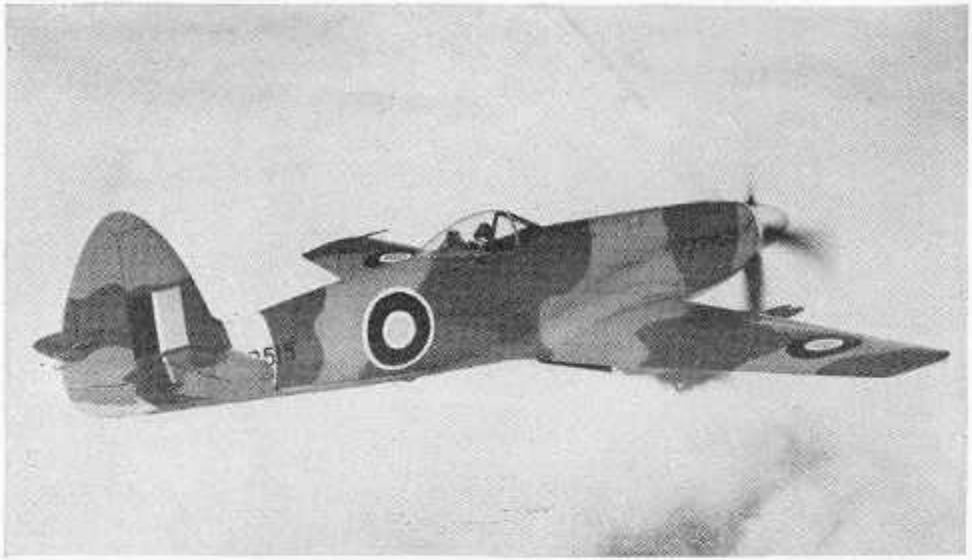
UNITED KINGDOM

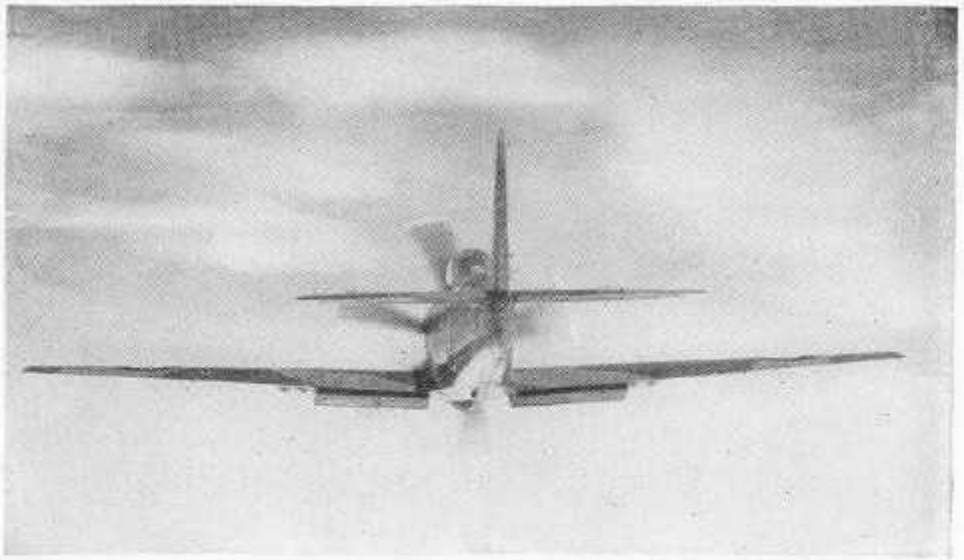


INFORMATION The Spiteful is the descendant of the world renowned Spitfire. Improved in many features and of cleaner design, the Spiteful is powered with a Rolls Royce Griffin 61 engine with a 5 bladed propeller installed. Its armament consists of 4–20mm fixed machine guns and facilities for loading both bombs and rockets.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.–ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
35'–6"	32'–4"	8,950	over 450/26,000	over 3,500	over 40,000	515

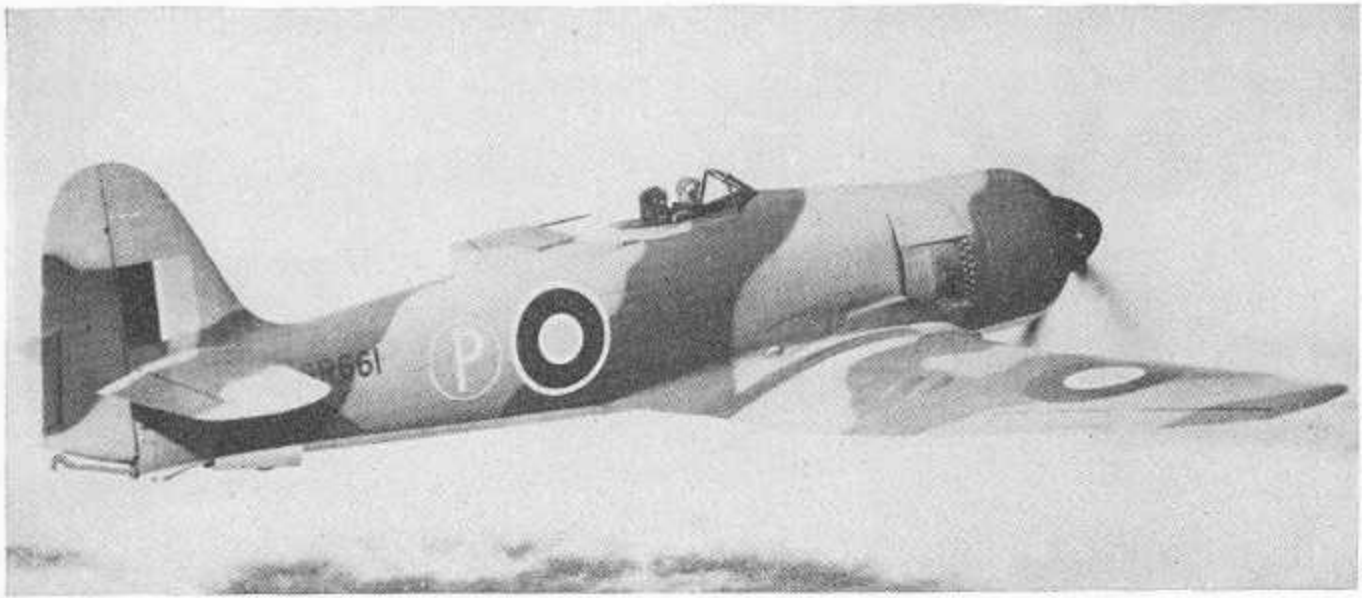
APRIL 1946 **RESTRICTED**

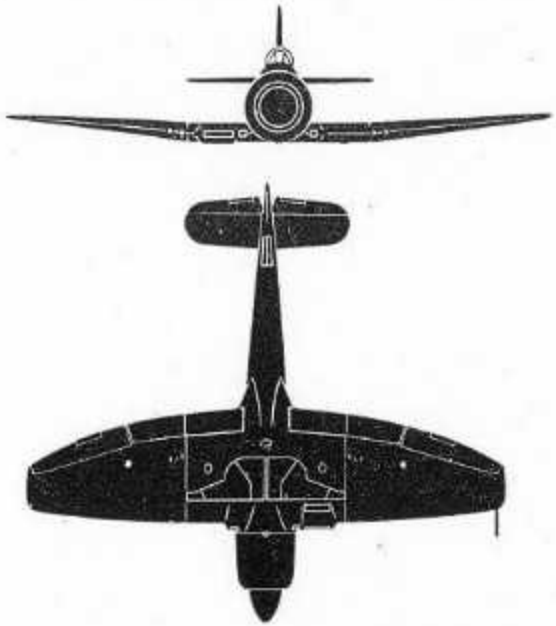




SEA FURY

UNITED KINGDOM

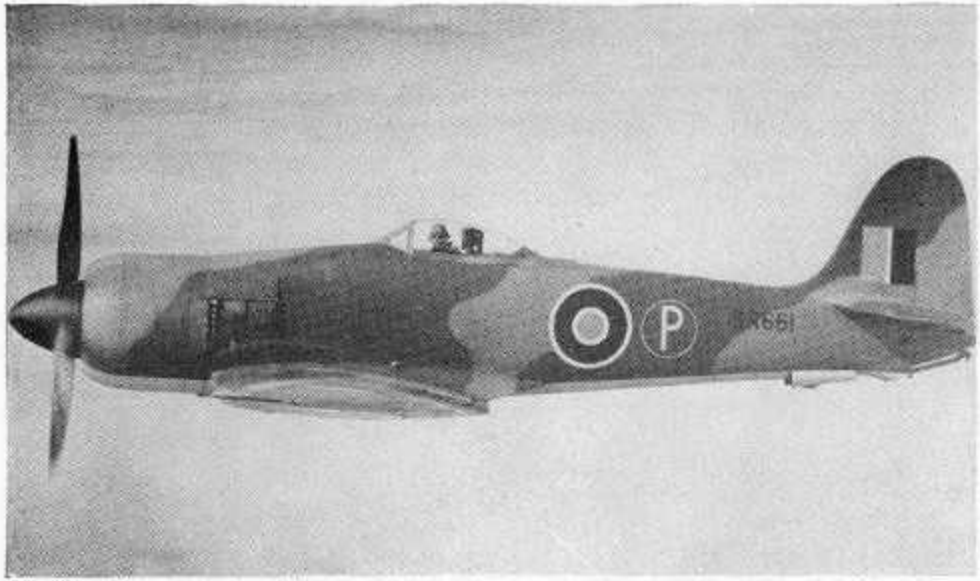


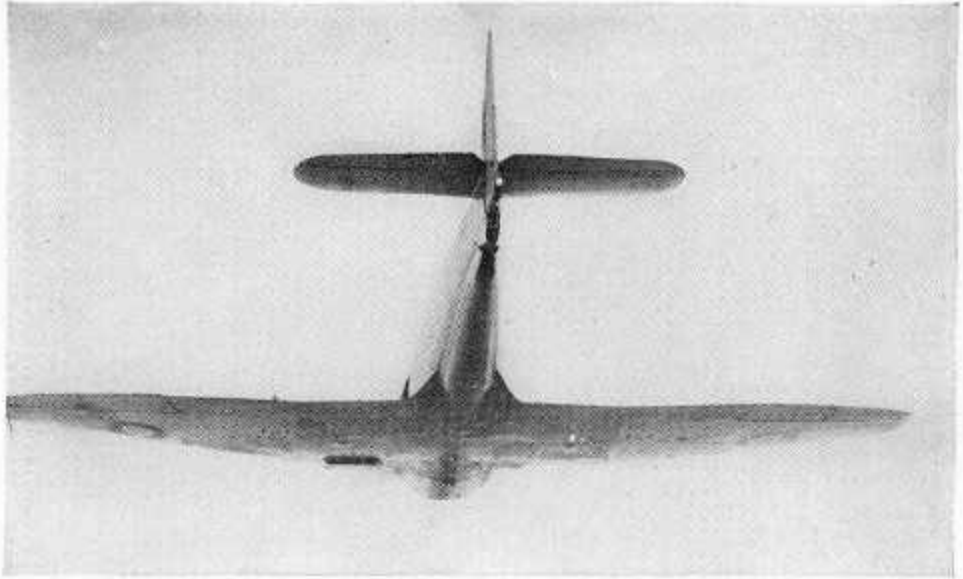


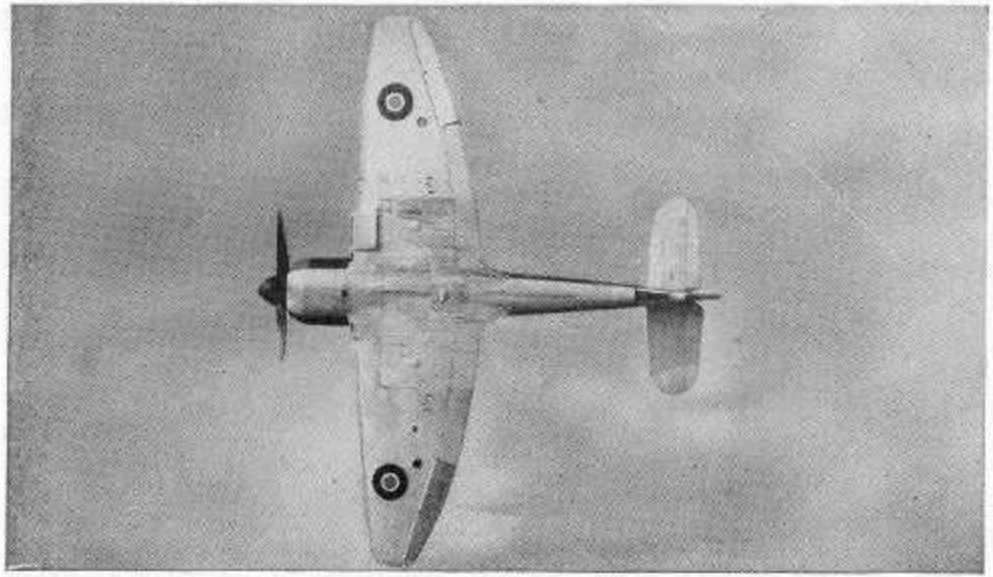
INFORMATION The Hawker made Sea Fury is another of Great Britain's trim fighters. Modified from the Fury to allow its use as a carrier based fighter the Sea Fury is powered with a 2,440 horsepower Centaurus 12 engine. It packs a lethal wallop with its 4–20mm fixed guns, six rockets, and maximum load of 2–1,000 pound bombs. The Sea Fury differs from the Tempest II in that the former has a shorter wing span. The carrier based version will have power folding wings.

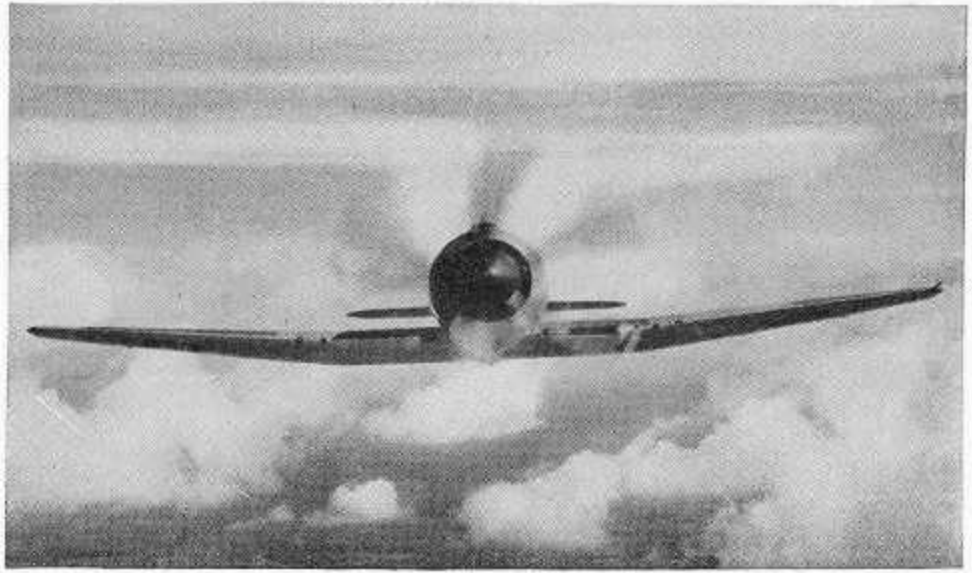
DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.–ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
38'–5"	34'–7"	12,050	460/18,000	5,640 at sea level		1,010

APRIL 1946 RESTRICTED





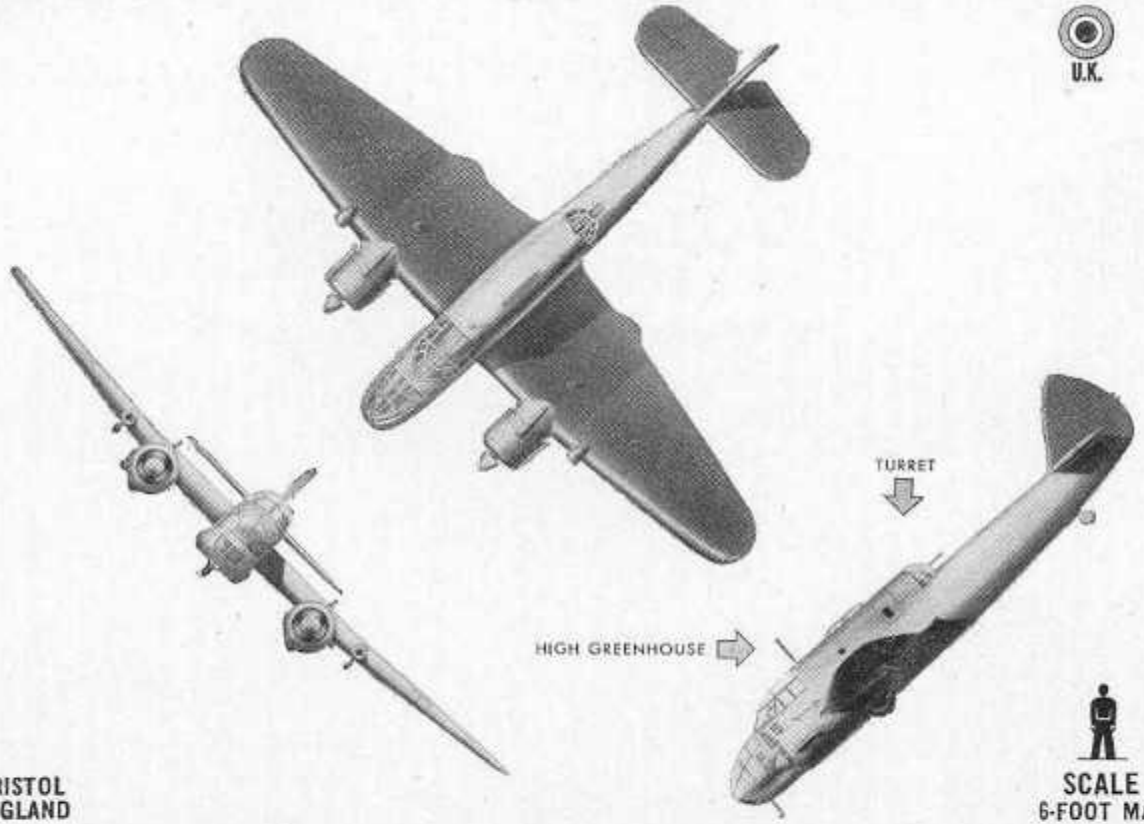




R. A. F.: BEAUFORT I, II

LIGHT BOMBER

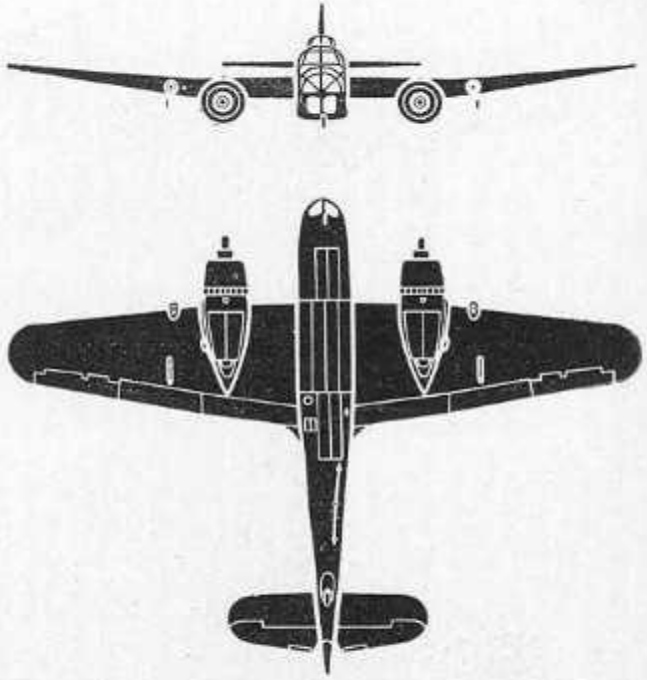
U.K.



BRISTOL
ENGLAND

SCALE
6-FOOT MAN

"BEAUFORT"



SPAN: 57 ft. 10 in.
LENGTH: 44 ft. 2 in.
MAX. SPEED: 275 m. p. h. at 6,500 ft.

SERVICE CEILING:
19,000 ft. (overload)

DISTINGUISHING FEATURES: Mid-wing monoplane with twin radial engines underslung. Bell shaped fuselage section. Dihedral on outer wing panels. Equitapered wings with rounded tips. Tapered trailing edge to elevator with V cut-out. Mid-turret faired into cabin. Fin and rudder are of the broad Bristol type.

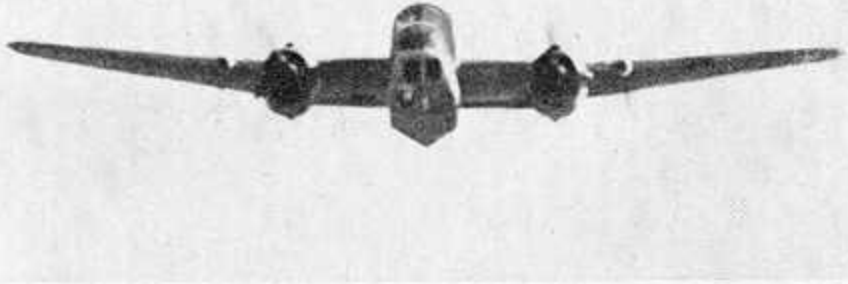
INTEREST: The Beaufort is one of the principal reconnaissance aircraft of the R. A. F. Coastal Command. It is used for torpedo attacks on coastal shipping, for mine laying and for low level bombing of German occupied ports. The success of this aircraft led to the use of its basic design for development of the Beaufighter. For torpedo attacks, the Beaufort is faster than the Albacore torpedo bombers of the British Fleet Air Arm. Not being equipped with dive brakes, it usually uses a low flat approach to keep its speed low enough to launch the torpedo successfully. The newer models do not have the rounded plates projecting beyond the trailing edge of the wing.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 1

RESTRICTED

A



C

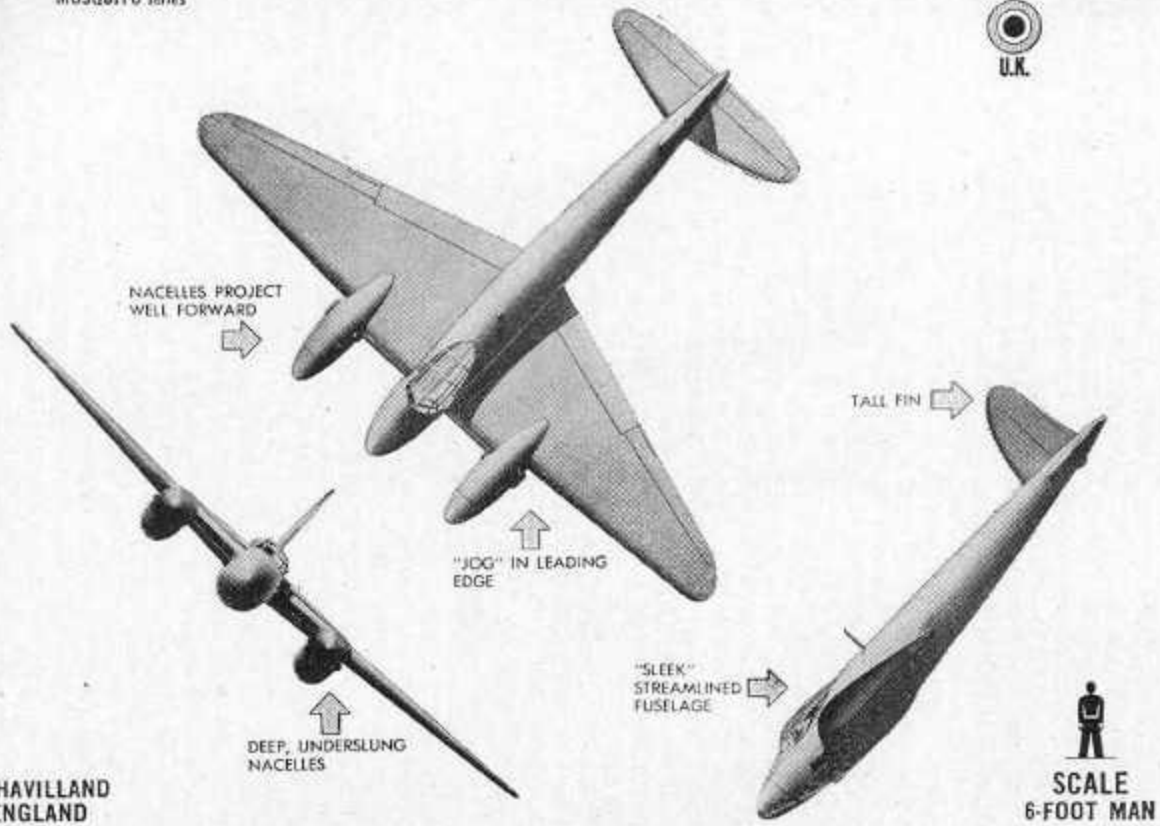
B

D

R. A. F.: **MOSQUITO IV**
MOSQUITO series

LIGHT BOMBER—FIGHTER

U.K.



DeHAVILLAND
ENGLAND

SCALE
6-FOOT MAN

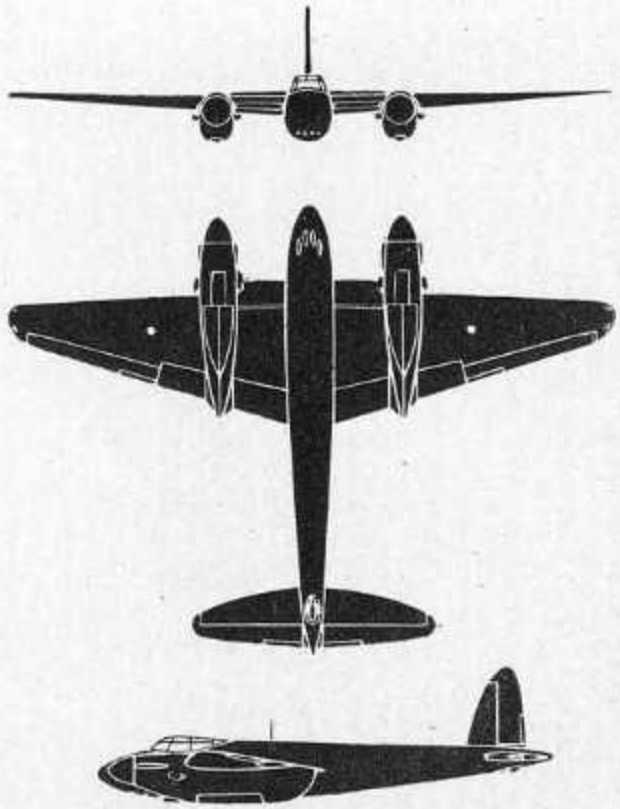
DISTINGUISHING FEATURES: Twin engine, high mid-wing monoplane. Leading edge of wing inboard of engines is farther forward than outer section. Trailing edge of wing has pronounced taper with rounded tips. In-line engines are underslung and protrude forward nearly as far as the short nose. Fuselage is long and narrow with wide raised cockpit forward of wings. Extremely tall single fin and rudder set forward. In certain models the engine nacelles protrude beyond the trailing edge.

INTEREST: This reconnaissance bomber, one of the fastest aircraft of its type, became operational during the latter part of 1942. In raids over Europe it has outdistanced the F. W. 190's sent up to intercept it. It attracted considerable attention when it was used to bomb Berlin on the first daylight raid on that city. A particularly clean aircraft in appearance, the Mosquito is constructed for the most part of plywood. There is also a multi-seat fighter version with nontransparent nose.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

"MOSQUITO"

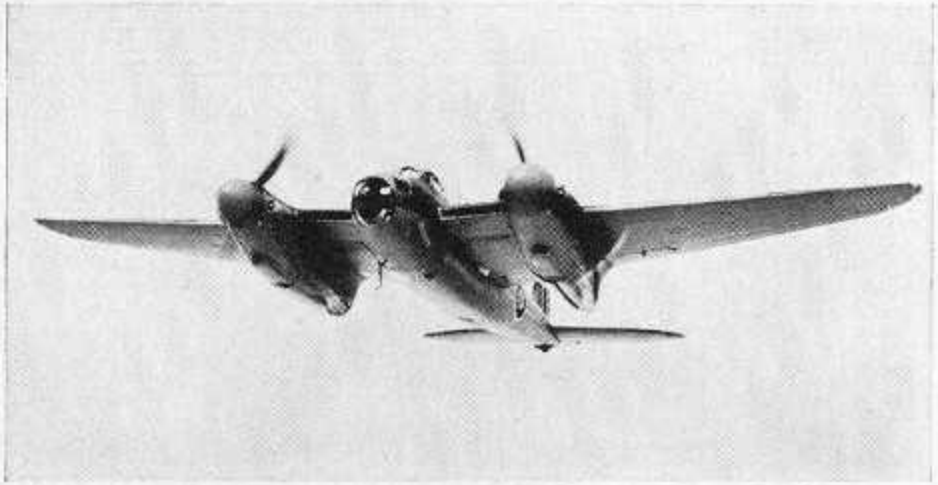


SPAN: 54 ft. 2 in.
LENGTH: 40 ft. 9½ in.
MAX. SPEED:

SERVICE CEILING:

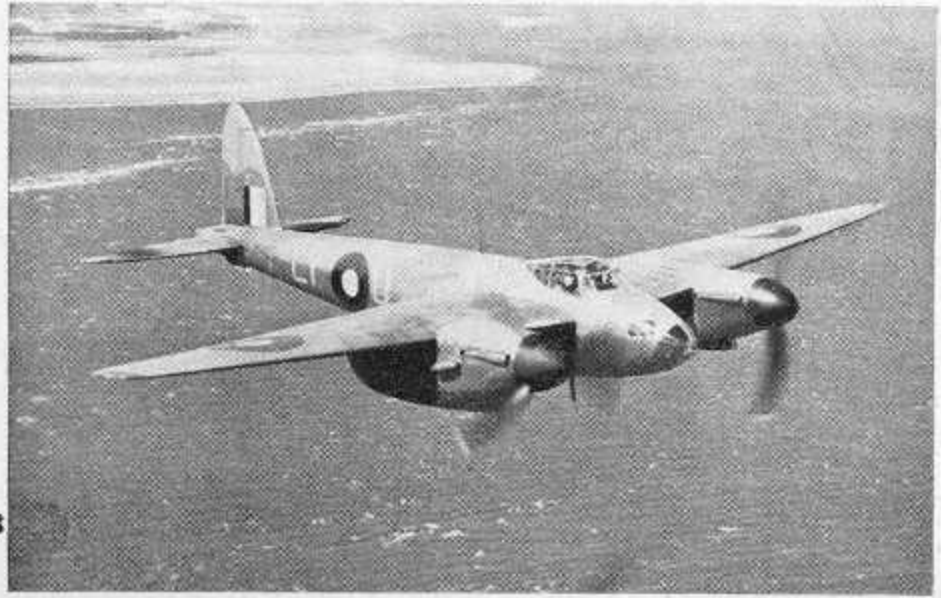
RESTRICTED

A

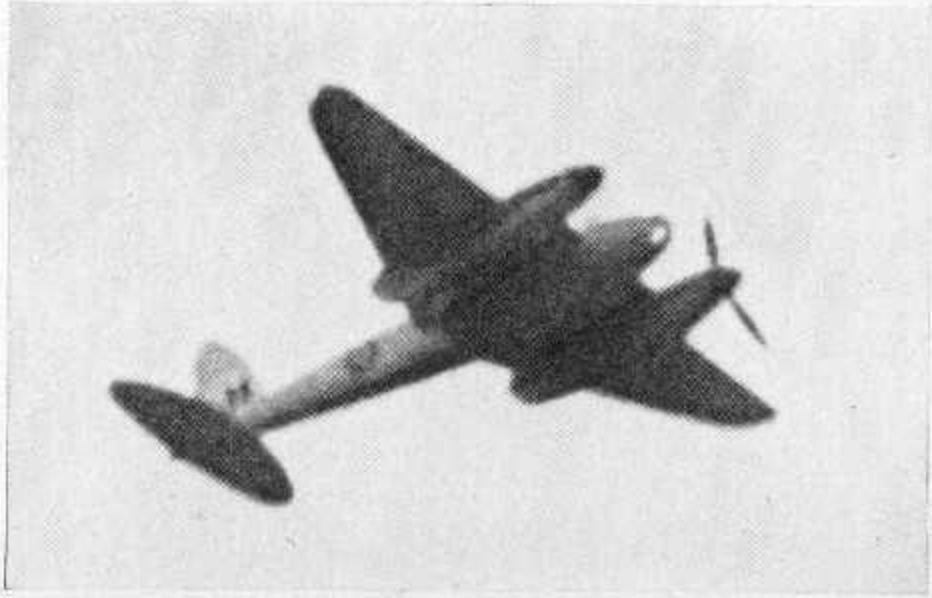


C

B



D

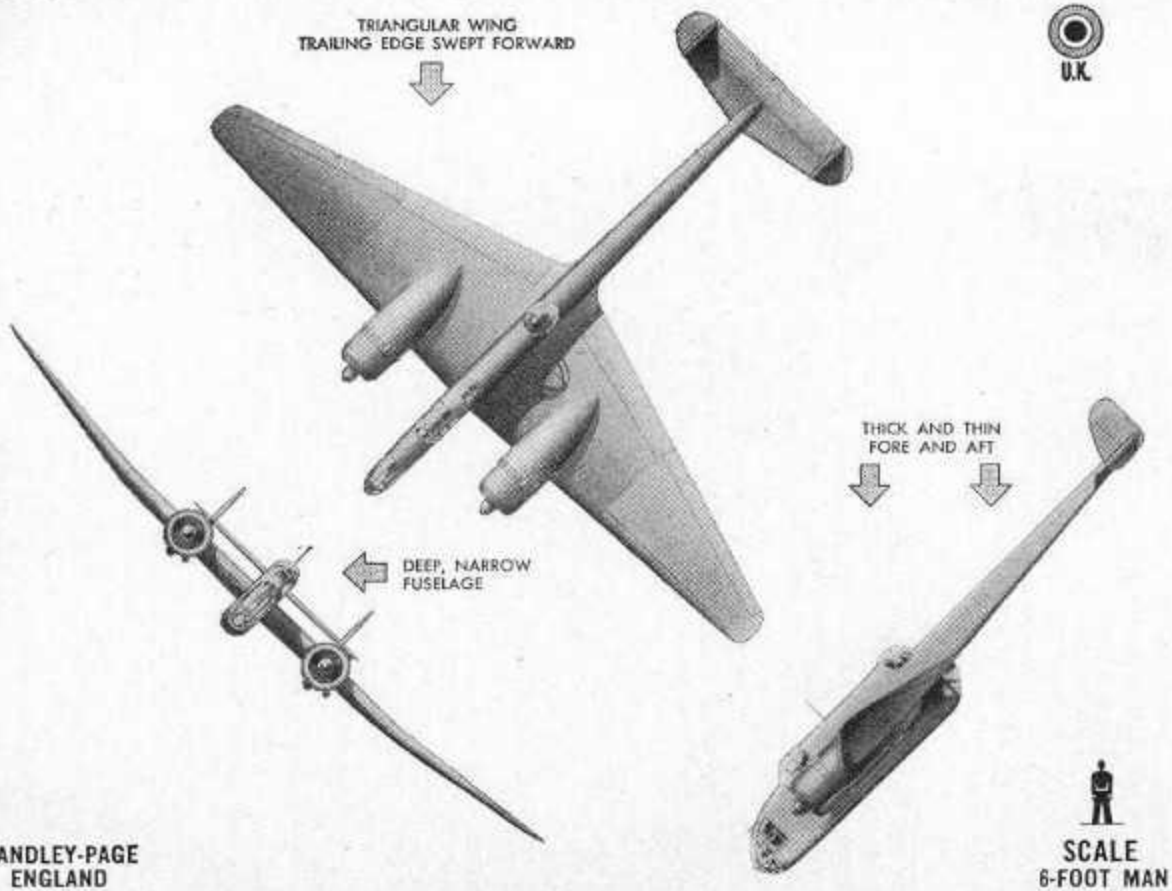


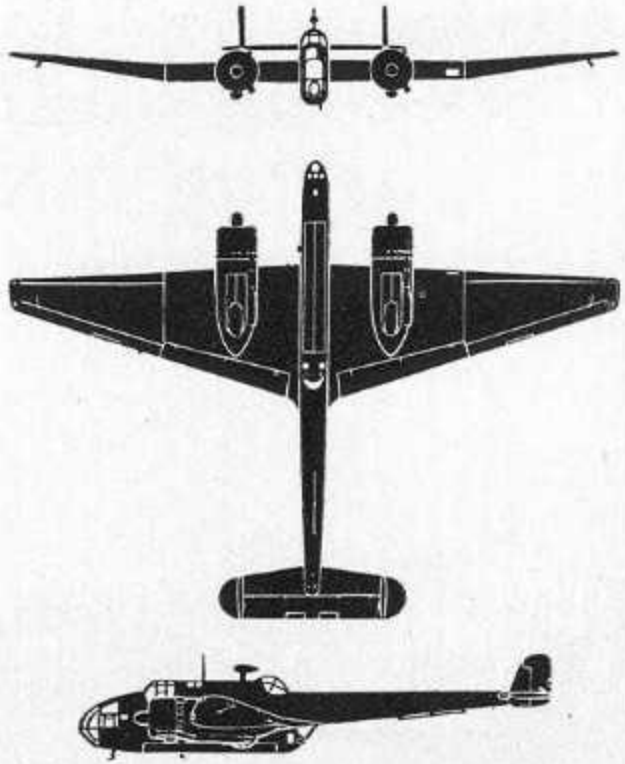
R. A. F.: HAMPDEN

LIGHT BOMBER

U.K.

"HAMPDEN"





HANDLEY-PAGE
ENGLAND

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Mid - wing monoplane with two radial engines. Wing has marked taper on trailing edge with small raked tips. Fuselage is extremely long and narrow in plan. In side elevation, the fuselage is deep to trailing edge of wing where there is a sharp step on both top and bottom. Aft of the wing, the fuselage is very small, tapering back to the stabilizer. Twin fins and rudders are set slightly inboard on stabilizer. Stabilizer has slight taper on leading edge. Straight trailing edge and round tips.
INTEREST: A veteran among twin-engined bombers, the Hampden, although retiring in favor of improved Beauforts and Blenheims, is still doing good work as a mine layer. The Hampden carriers a crew of four.

SPAN: 69 ft. 4 in.
LENGTH: 53 ft. 7 in.
MAX. SPEED: 247 m. p. h. at 13,800 ft.

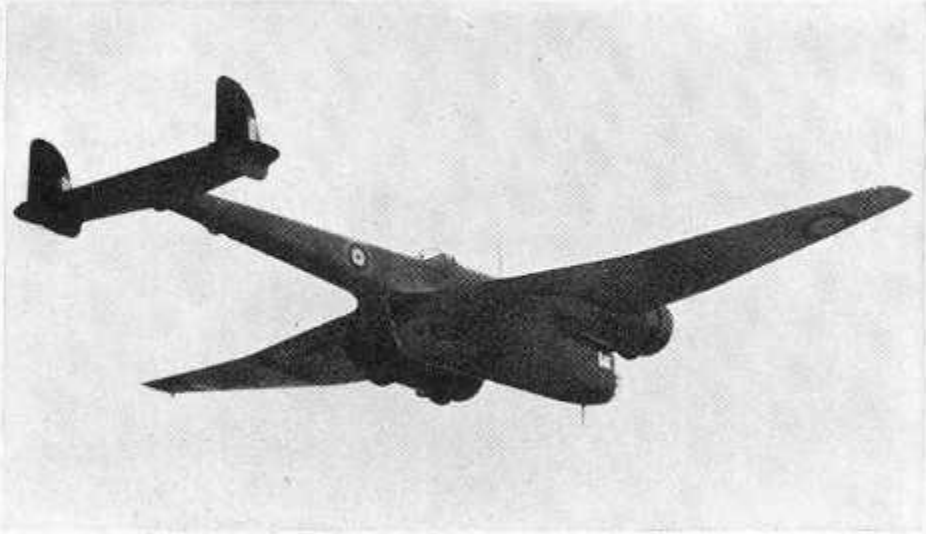
SERVICE CEILING:
19,000 ft. (max. load)

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

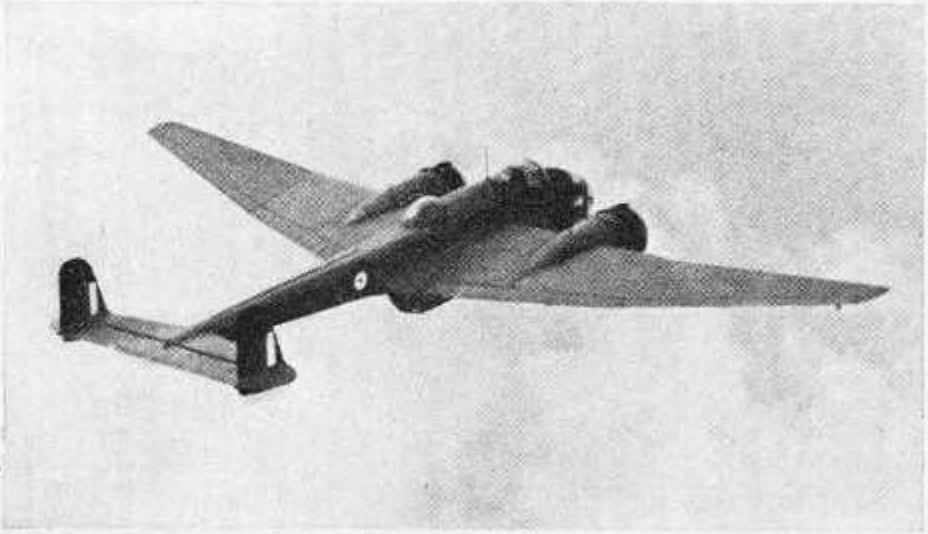
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

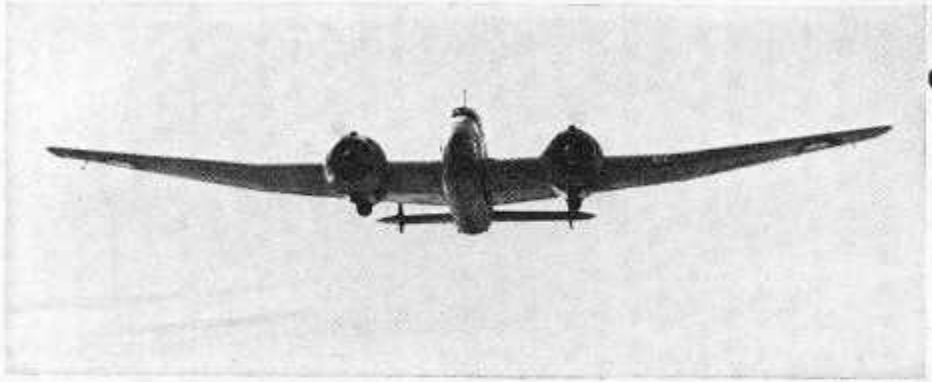
A



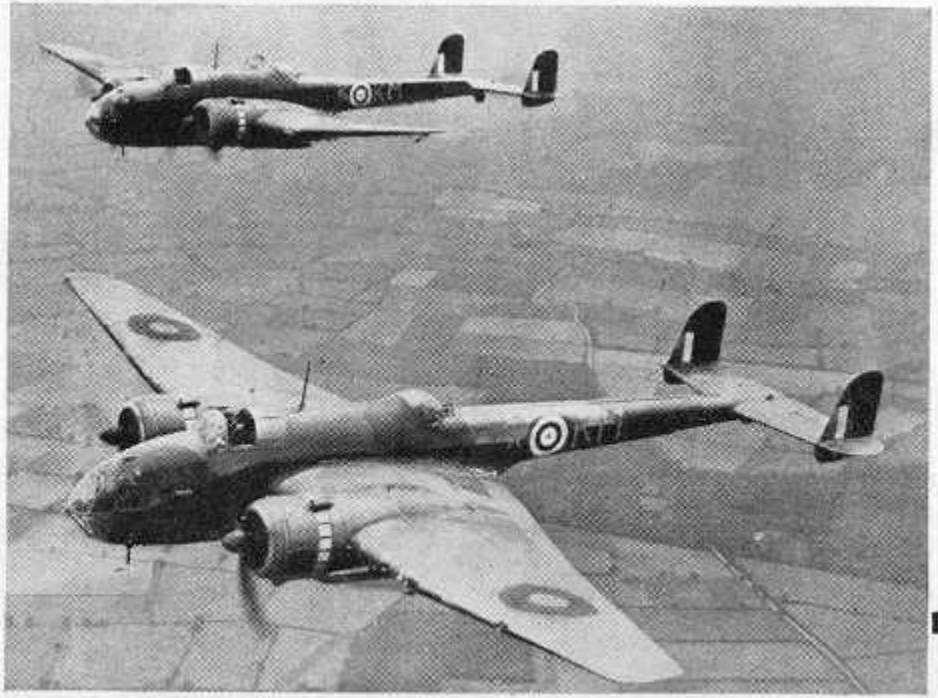
B



C



D

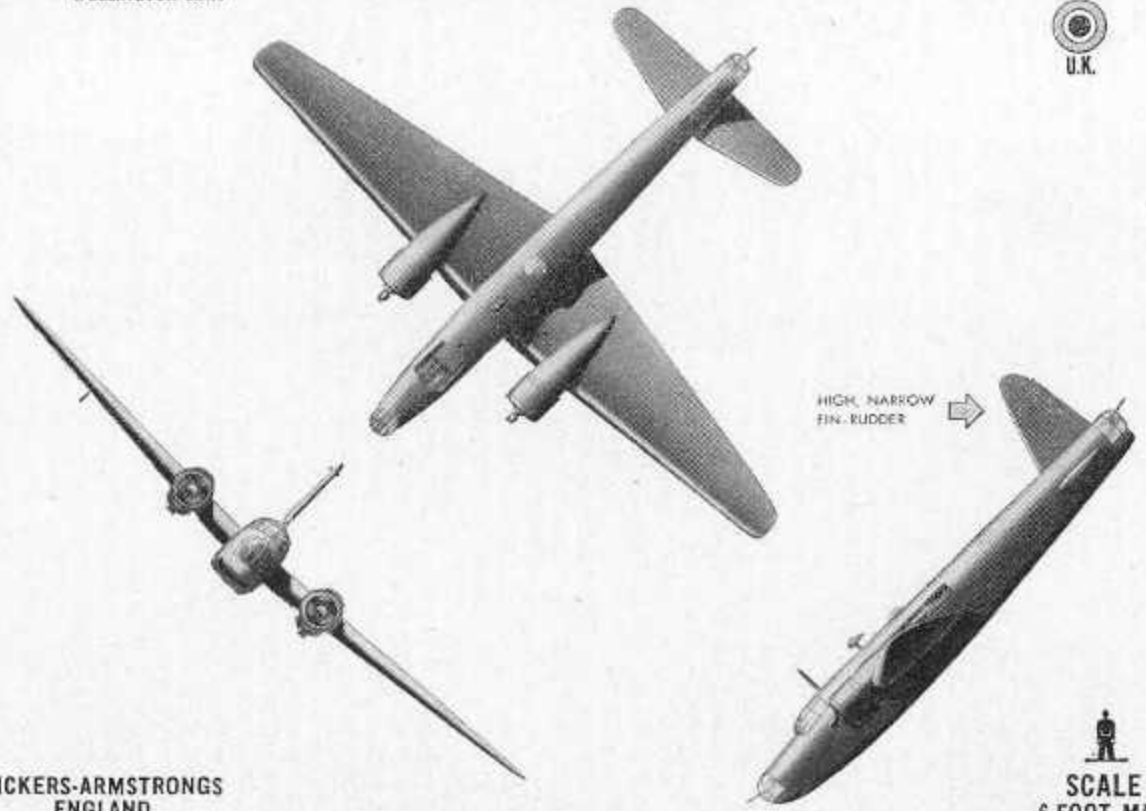


R. A. F.: WELLINGTON IV
WELLINGTON series

MEDIUM BOMBER

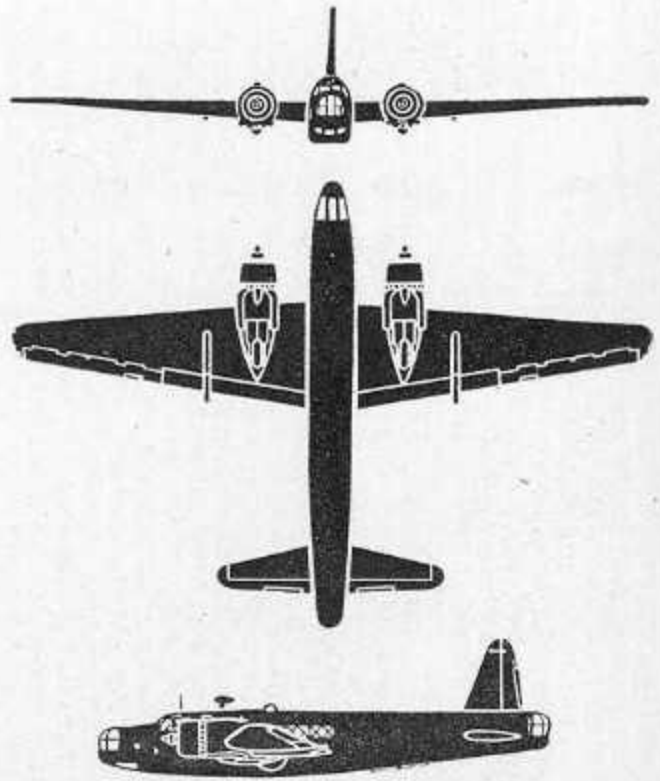
U.K.

"WELLINGTON"



VICKERS-ARMSTRONGS
ENGLAND

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Twin engined, mid-wing monoplane. Wellington II has in-line engines; Wellington III, radial engines. Slight dihedral from root of wings. Wings tapered on both edges with raked tips. Deep, heavy fuselage with blunt nose and bulbous tail turret. High triangular fin-and-rudder set in from tail turret. Tail-plane tapered on leading edge with round tips.

INTEREST: The Wellington is one of the most used British bombers. Although heavier and larger aircraft are now being produced, Wellingtons are still constructed in great numbers. Numerous versions, with varying fuselage lengths, have been brought out since the war began. Its geodetic construction (metal basket-weave type of framework) make Wellingtons hard to shoot down. They have often returned safely to their bases with enormous holes in wings or fuselage.

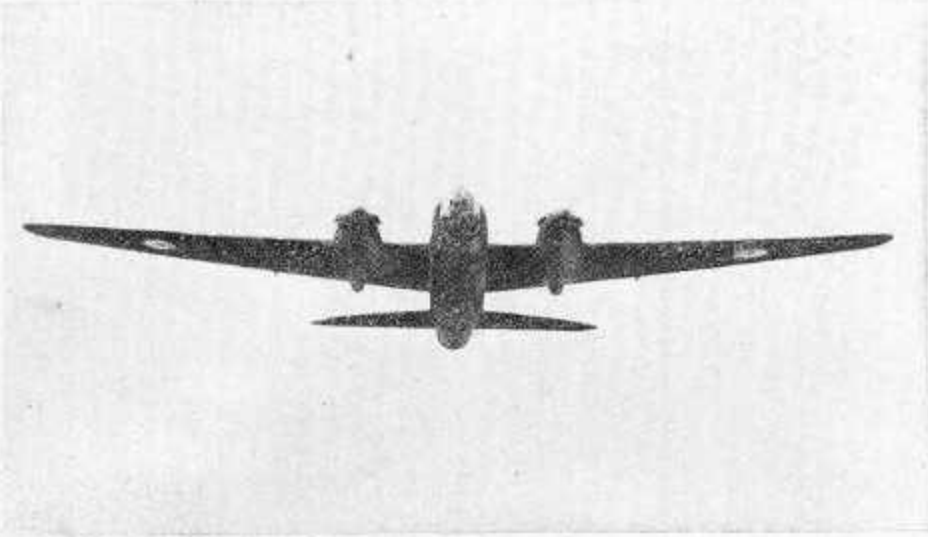
SPAN: 86 ft. 2 in.
LENGTH: 61 ft. (II)
61 ft. 6 in. (III)
APPROX. MAX. SPEED: 244 m. p. h. at 17,000 ft. (II)
SERVICE CEILING:
(II) 18,000 ft. (overload)

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

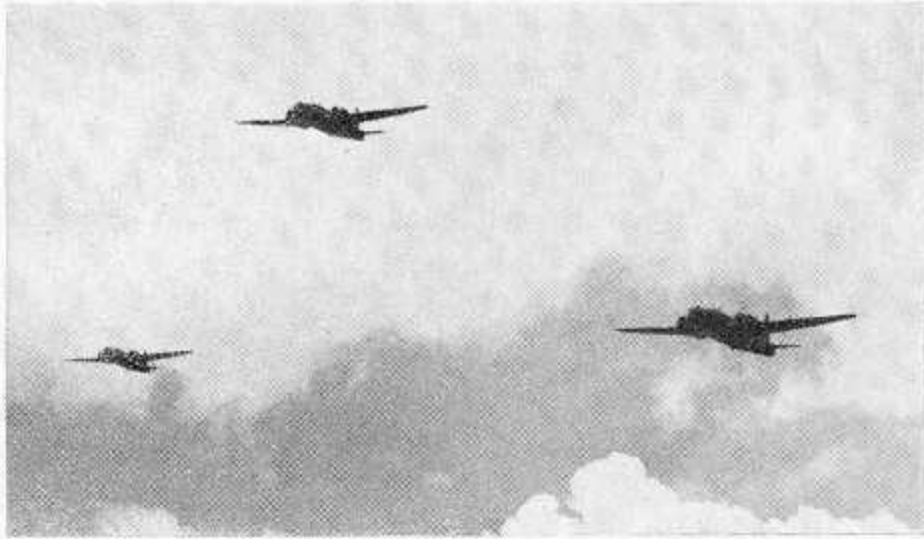
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

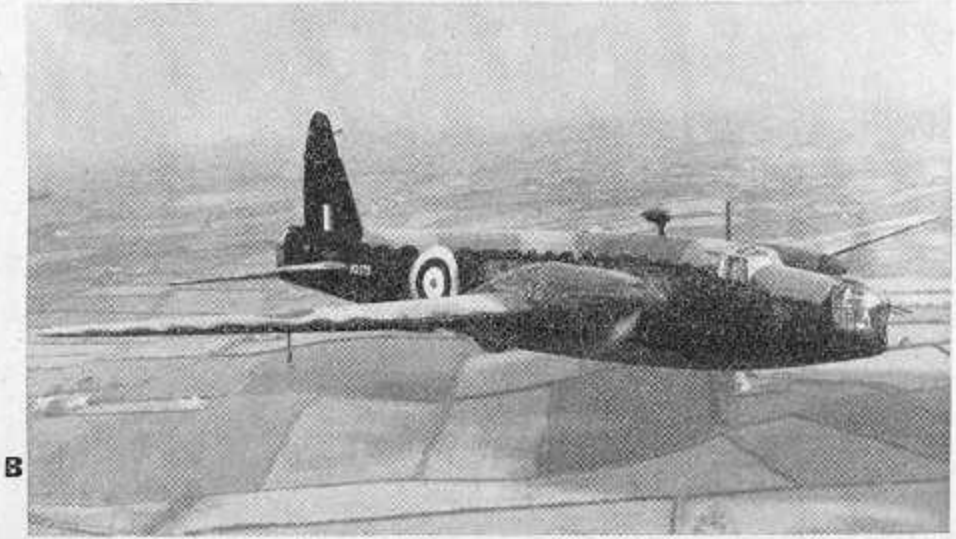
A



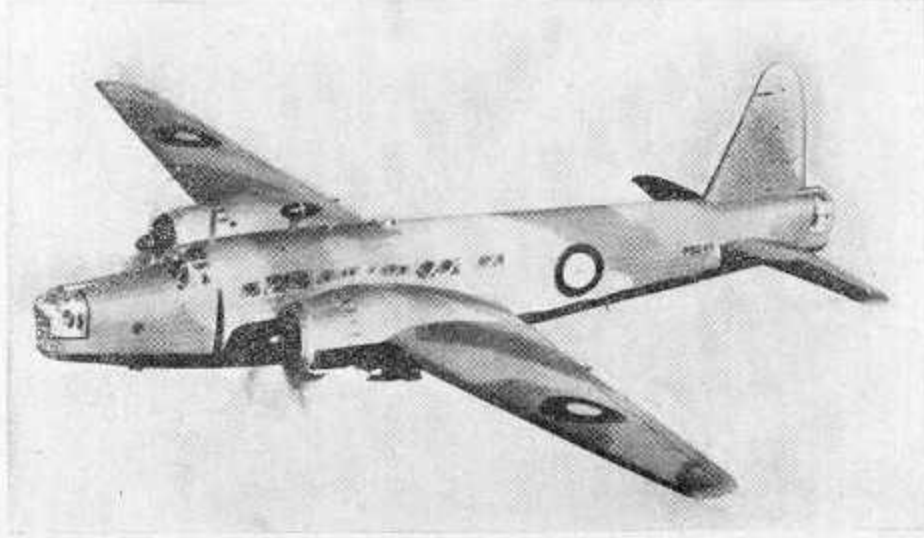
C



B



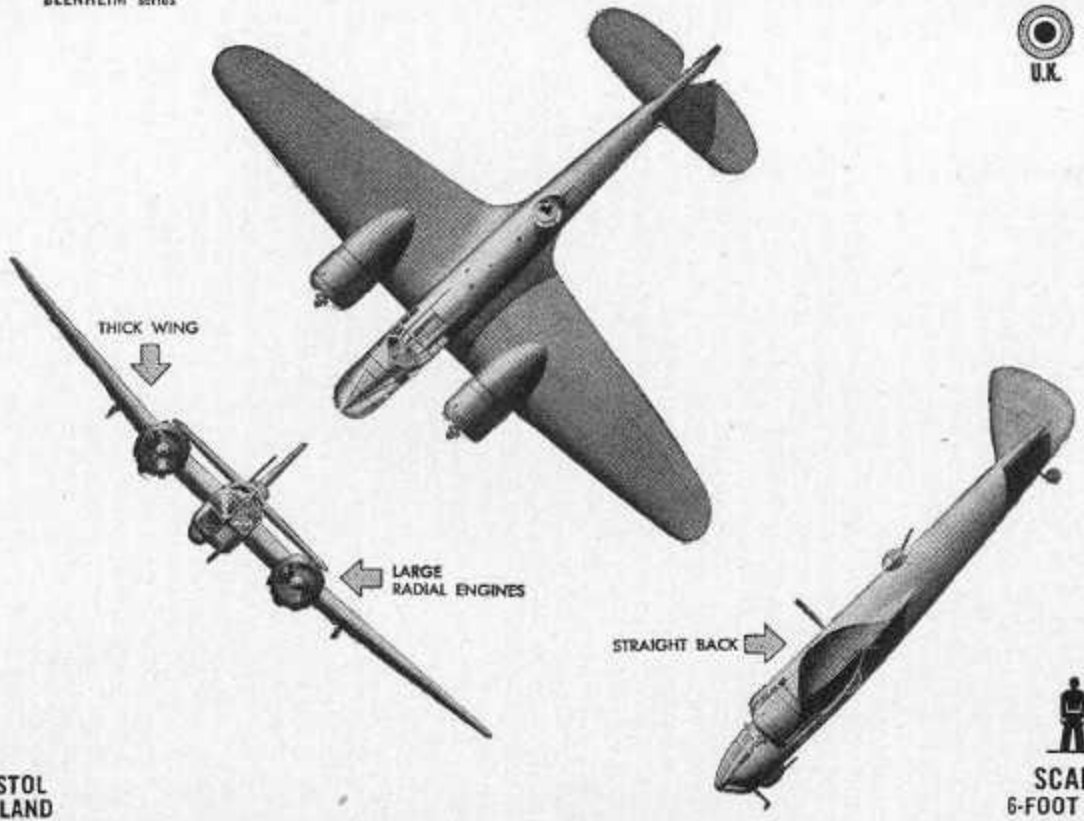
D



R. A. F.: BLENHEIM IV
BLENHEIM series

MEDIUM BOMBER

U.K.



BRISTOL
ENGLAND

SCALE
6-FOOT MAN

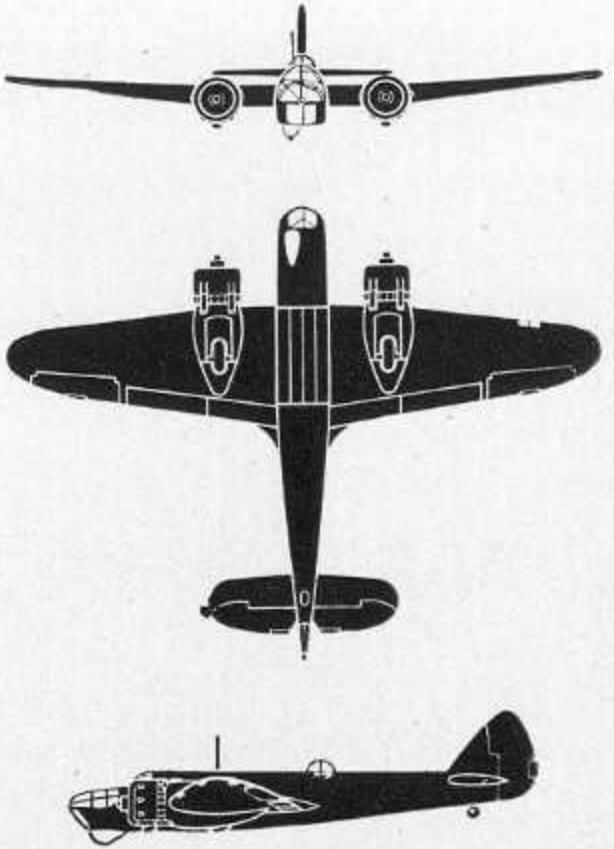
DISTINGUISHING FEATURES: Mid-wing monoplane with twin radial engines. Dihedral on outer wing panels. Equally tapered wing with elliptically curved tips. Cutaway in trailing edge of typical Bristol stabilizer and elevator. Partly retractable dorsal turret and high pointed fin and rudder.

INTEREST: The Blenheim was a standby of the R. A. F. in the early part of the war when it performed admirably as a bomber and as a long-range fighter over France and Norway. After the Norwegian campaign, not much was heard of the Blenheim until it was used in the North African campaigns and in the Middle East. The most recent version, the Mark V, is chiefly adapted for close support work with ground troops. One interesting feature of some Blenheims is the offset blister under the nose containing a rear firing gun which the navigator, who faces forward, controls by a system of mirrors. The Blenheim I has a much shorter nose, the fuselage length being 39 ft. 9 in.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

"BLENHEIM"



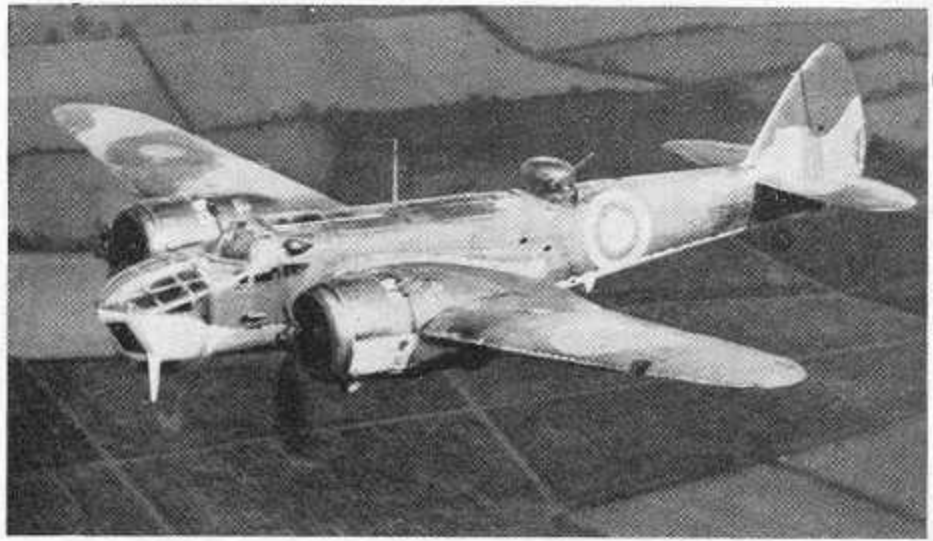
SPAN: 56 ft.
LENGTH: 42 ft. 7 in.
MAX. SPEED: 260 m. p. h. at 12,000 ft.

SERVICE CEILING: 26,500 ft.

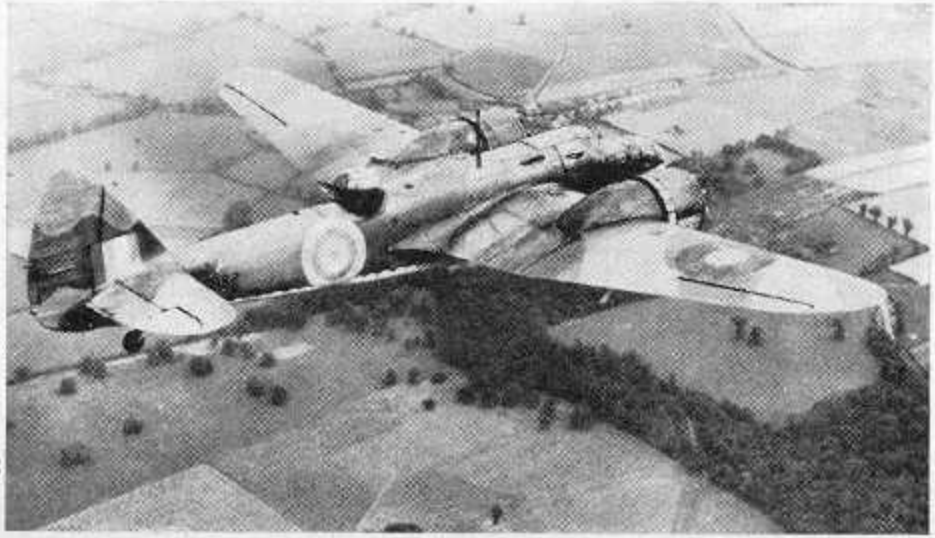
RESTRICTED

A

C



B



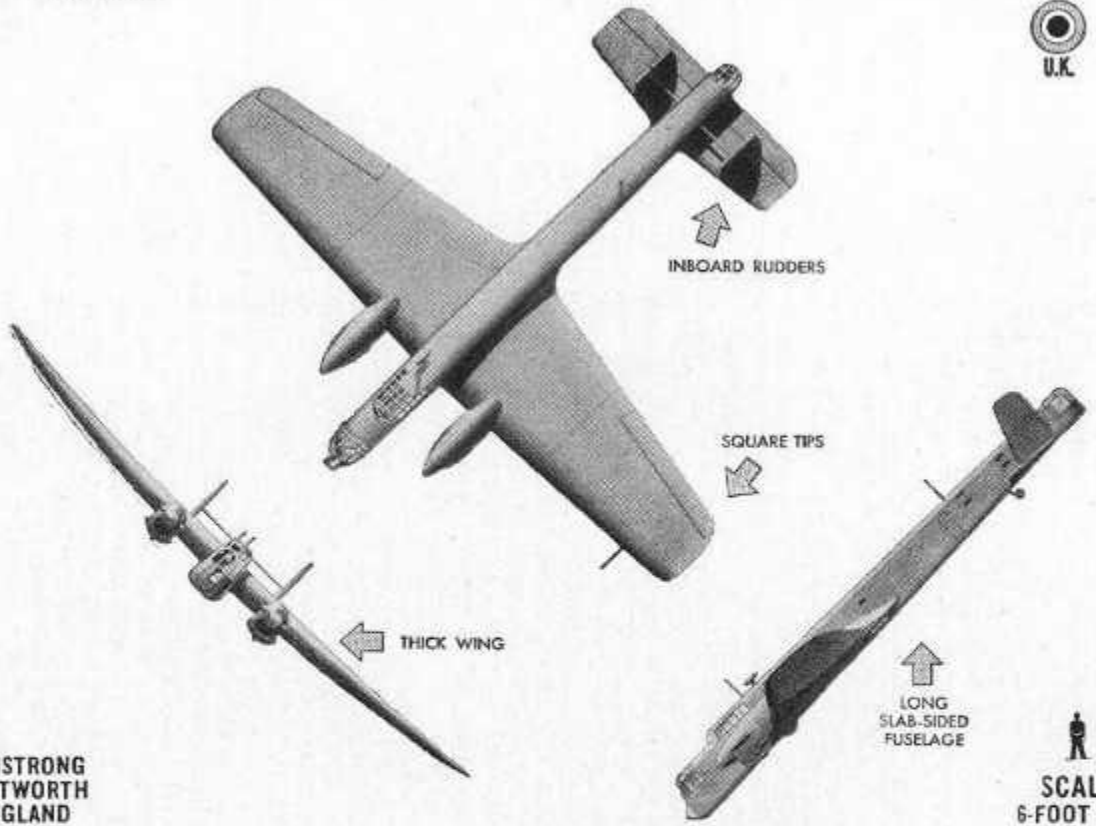
D

R. A. F.: WHITLEY V
WHITLEY Series

MEDIUM BOMBER

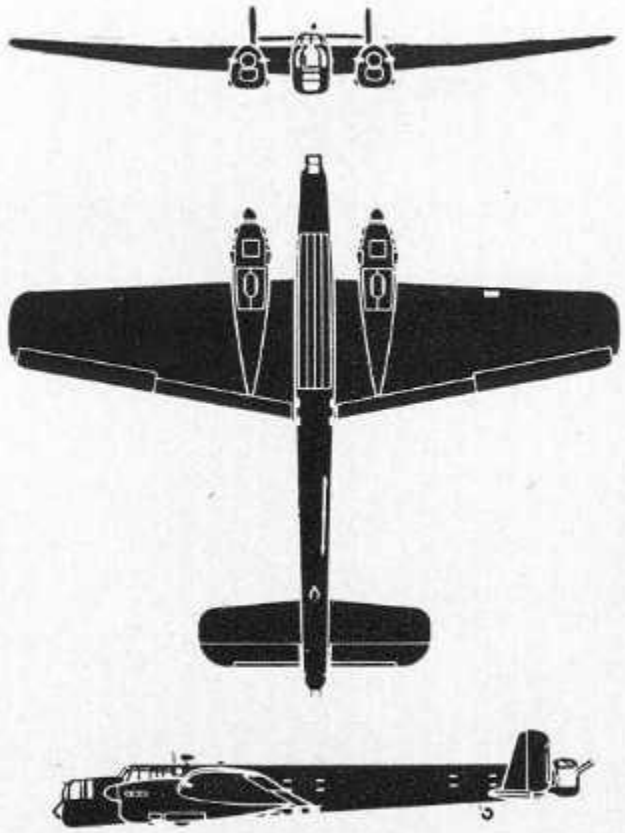
U.K.

"WHITLEY"



ARMSTRONG WHITWORTH
ENGLAND

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Mid - wing monoplane with twin in-line engines close to fuselage. Wings have marked taper on trailing edge with rounded, blunt tips. Fuselage is long and narrow, tapering upward in a straight line from nose to tail. Dihedral in outboard panels only. Blunt nose wi th under-slung appearance. Engines underslung. Nearly rectangular stabilizer and elevator set very low with twin fins and rudders set atop and well inboard. Large tail gun position.

INTEREST: The first British bombs of the present war to fall on the soil of the German mainland were dropped on the night of May 11, 1940, when a force of 18 Whitley bombers attacked railroad communications behind the lines of the German advance across the low countries. The latest Whitleys, the Mark V's, are still in operation with the British Coastal Command doing anti-submarine duty and minelaying. The Whitley I, II, and III, now obsolescent, have radial engines and wider fins with curved leading edge.

SPAN: 84 ft
LENGTH: 72 ft. 6 in.
MAX. SPEED: 221 m. p. h. at 17,750 ft.

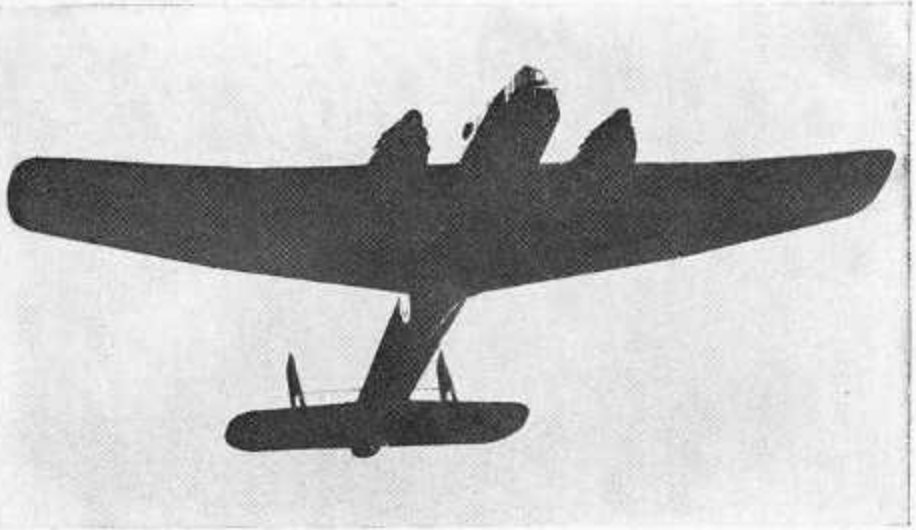
SERVICE CEILING:
20,000 ft. (overload)

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

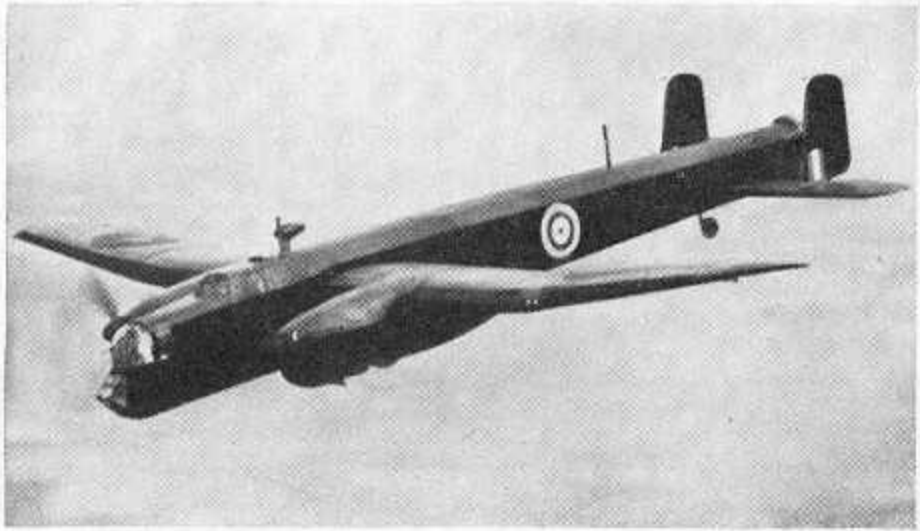
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

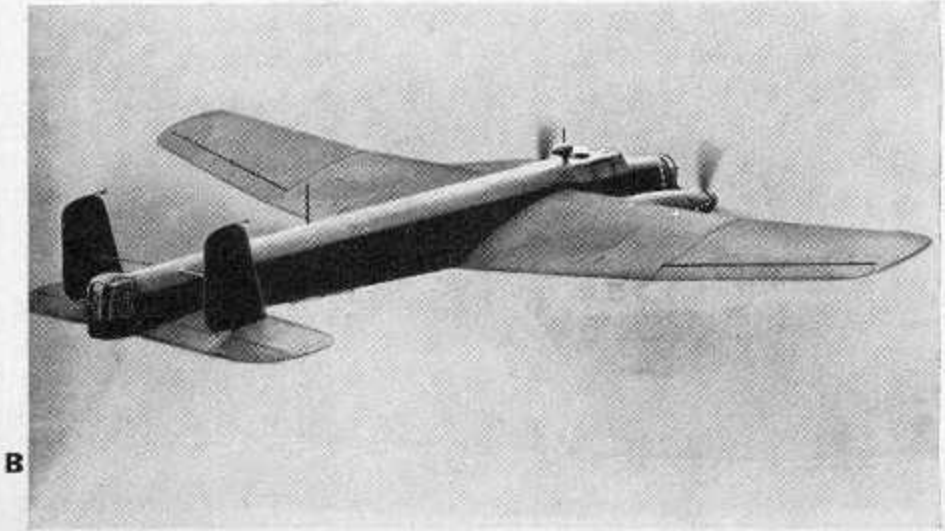
A



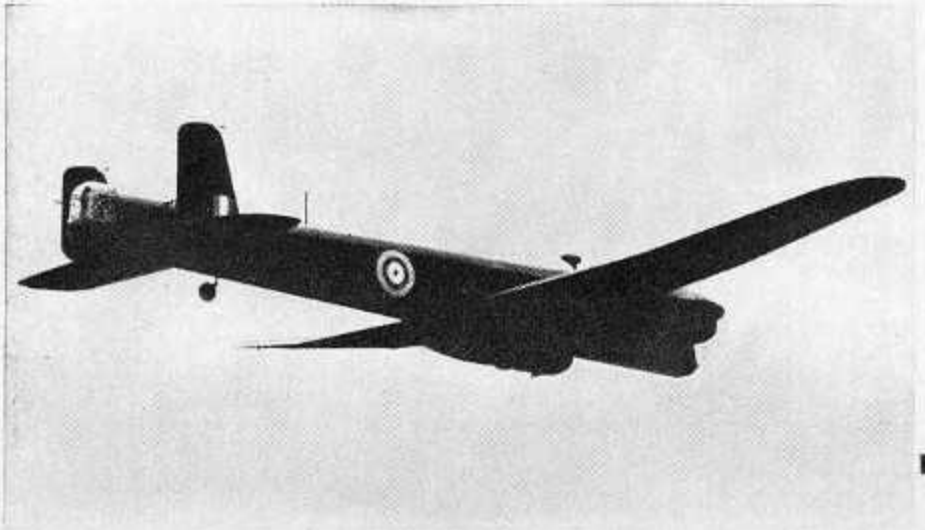
C



B



D



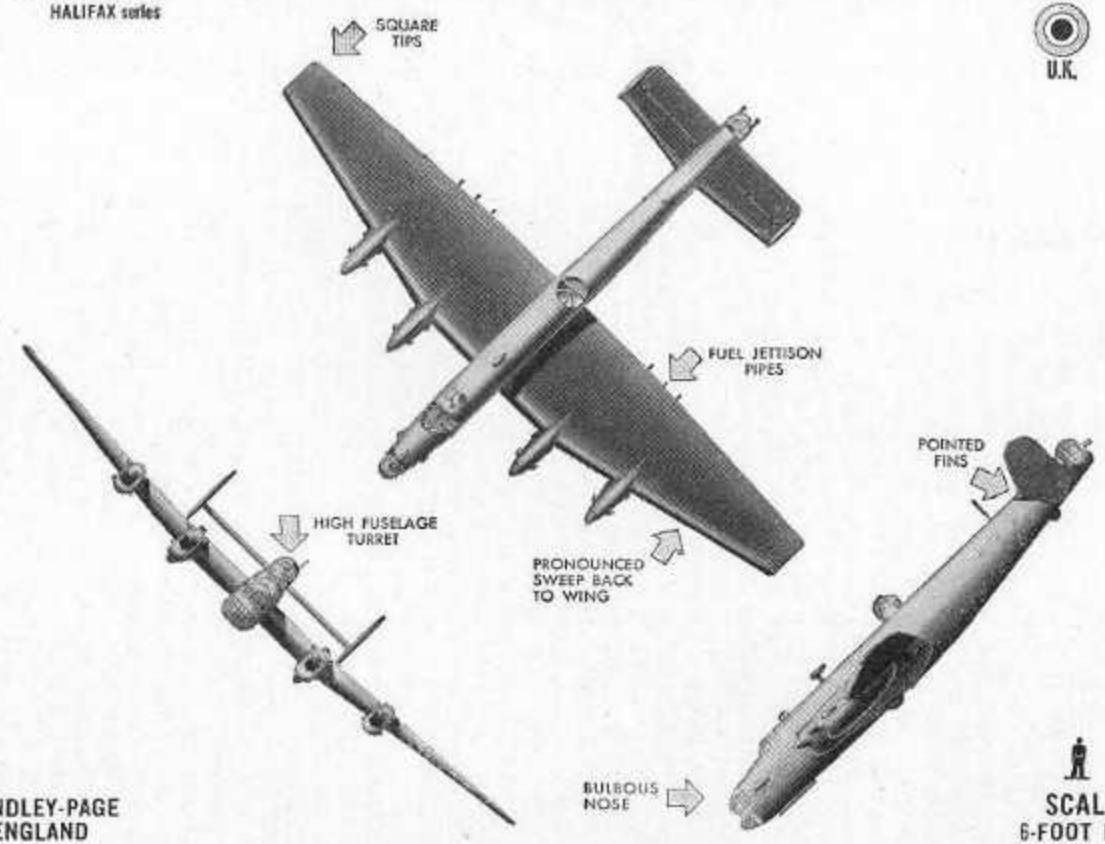
R. A. F.: HALIFAX I, II

HALIFAX series

HEAVY BOMBER

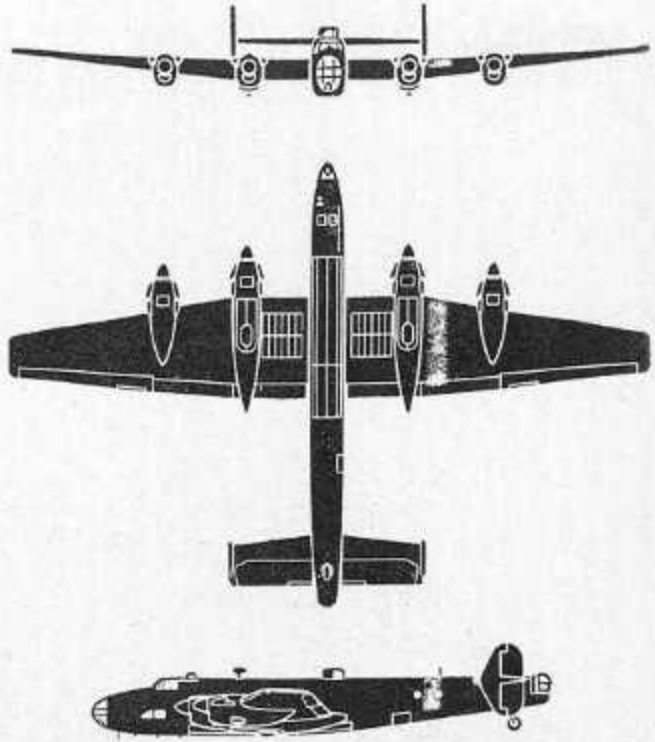
U.K.

"HALIFAX"



HANDLEY-PAGE
ENGLAND

SCALE
6-FOOT MAN



SPAN: 99 ft.
LENGTH: 71 ft. 7 in.
MAX. SPEED: 262 m. p. h. at 17,750 ft.

SERVICE CEILING:
17,800 ft. (overload)

DISTINGUISHING FEATURES: Mid - wing monoplane with four in-line engines underslung. Dihedral on outer wing panels. Equi-taper on outer wing panels and square tips. Elongated fuselage. Twin fin and rudders, with V-shaped leading edges.

INTEREST: This seven-place, long-range heavy bomber can carry very large bomb loads for great distances. It was designed for production-line speed rather than air speed, and is not as fast as the Lancaster or American heavy bombers of the same type. It has been in use in the Middle East and extensively over Germany, where its "block busting" bombs have caused considerable damage. This bomber was christened by Lord Halifax, the present British Ambassador to the United States. Pilots call the aircraft the "Halibag." Maximum bomb load is approximately 11,000 lbs. The nose is currently being altered to a simple oval form, largely transparent.

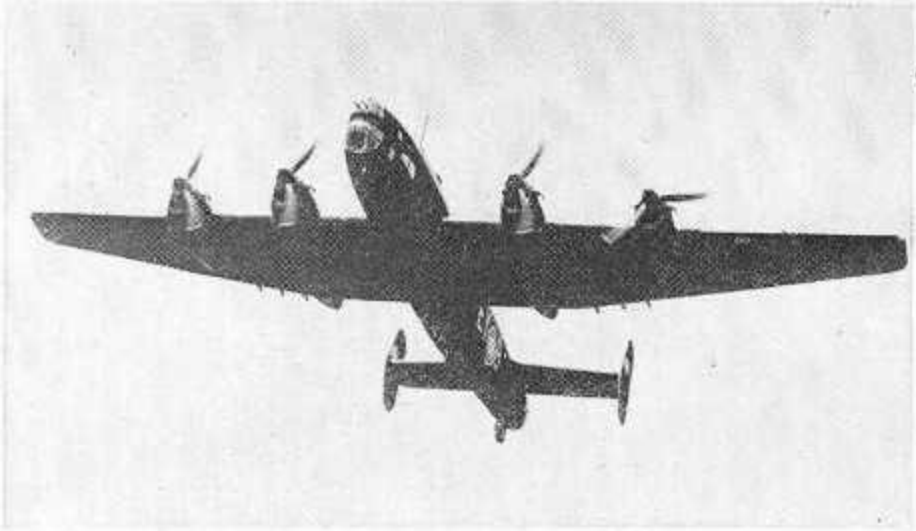
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

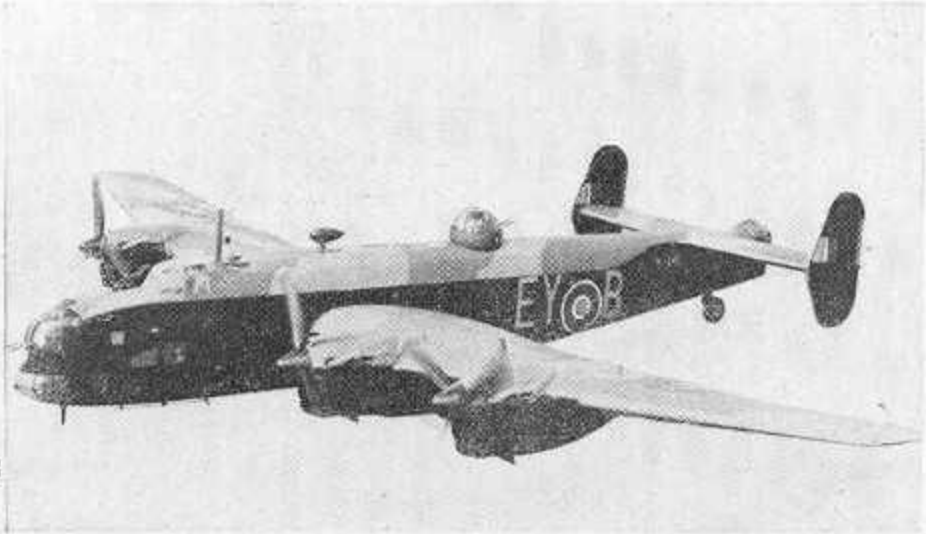
RESTRICTED

A

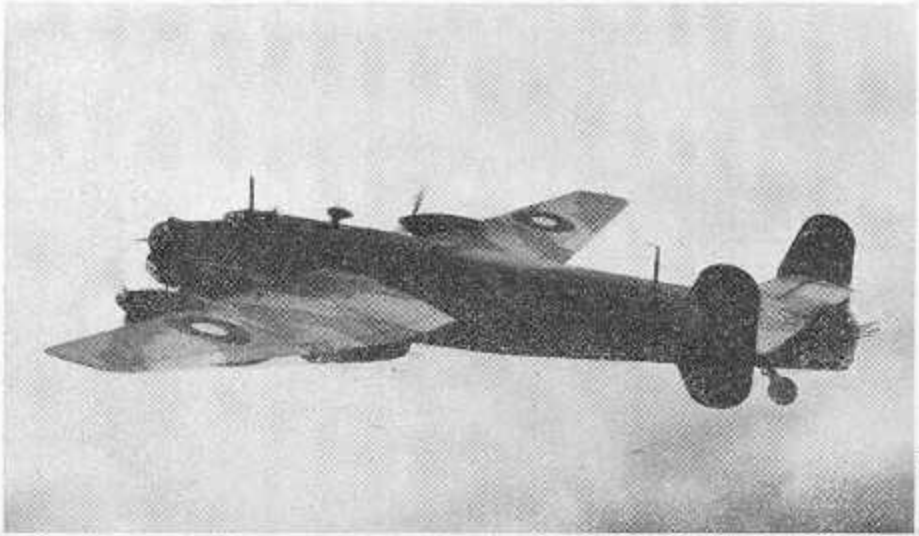
C



B



D

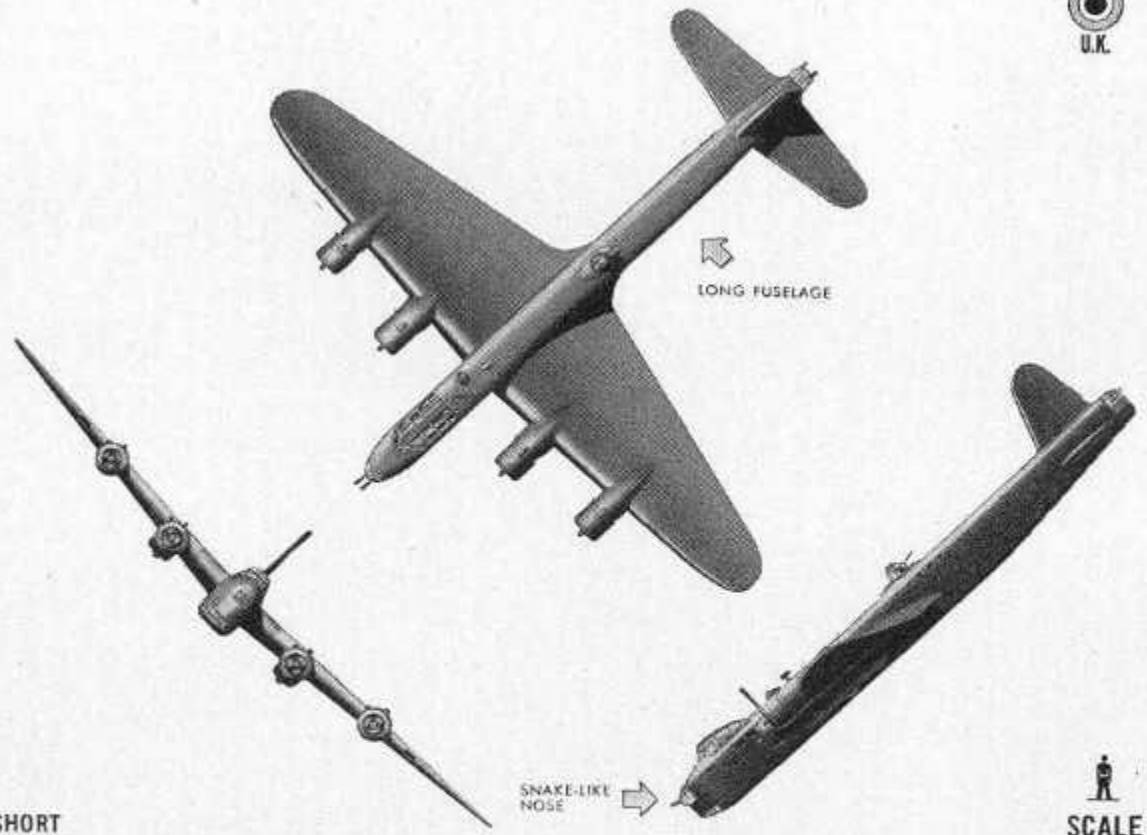


R. A. F.: STIRLING I, II

HEAVY BOMBER

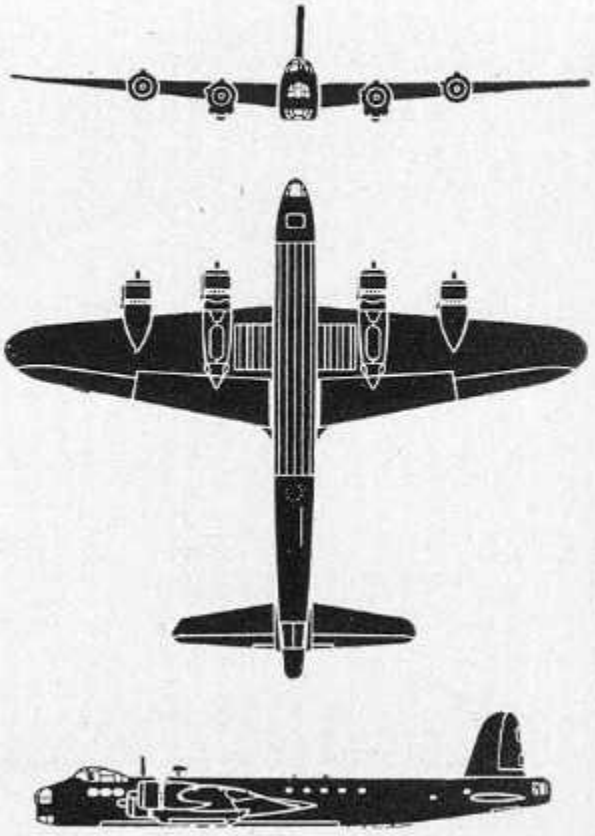
U.K.

"STIRLING"



SHORT
ENGLAND

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Mid - wing monoplane with four radial engines. Inboard engines underslung. Dihedral from wing roots. Wing equally tapered with sharply rounded tips. Long slab-sided fuselage with small greenhouse placed high on nose. Tall single fin-and-rudder forward of tail turret.

INTEREST: The Short "Stirling" was the first of the big British four-engined bombers to go into service, becoming operational early in 1941. It has taken part in many night raids on Germany and many daylight sorties over France. This aircraft can carry over 8 tons of bombs, one of the heaviest loads of any bomber in operation today.

SPAN: 99 ft.
LENGTH: 87 ft. 3 in.
APPROX. MAX. SPEED: 272 m. p. h. at 14,000 ft.
SERVICE CEILING: 18,000 ft. (overload)

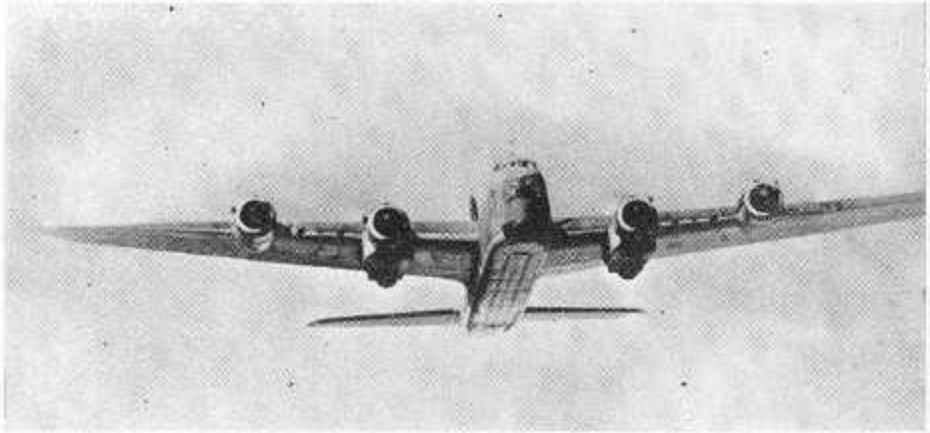
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

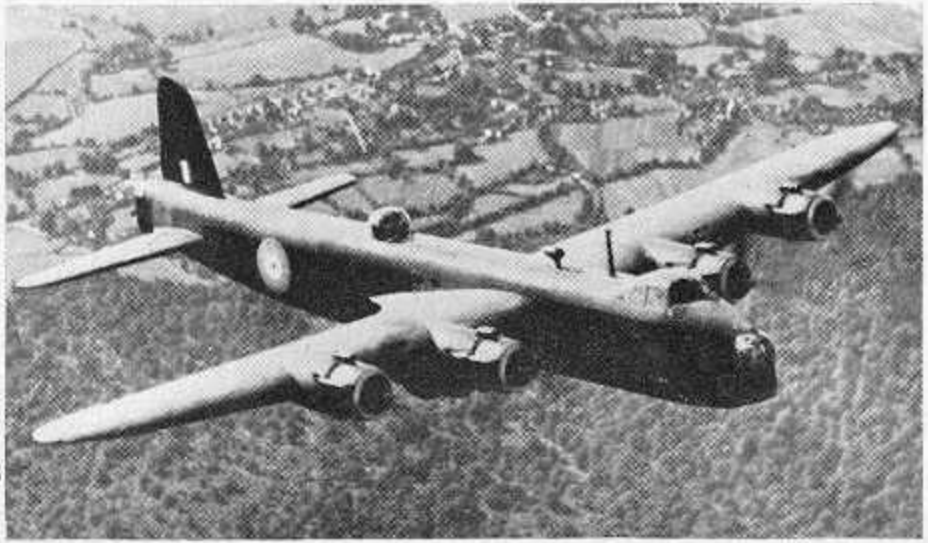
RESTRICTED

A

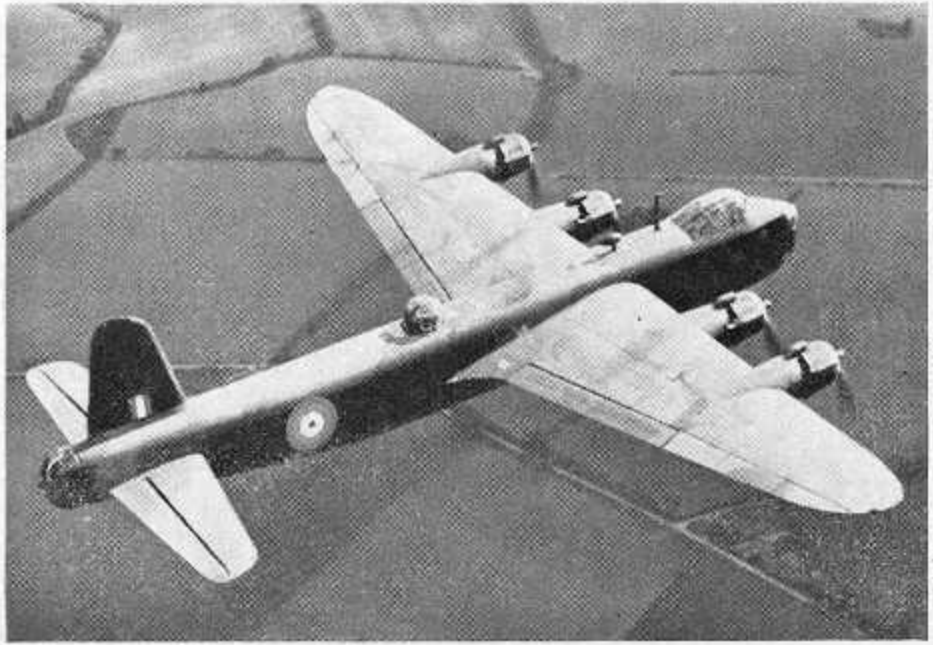
C



B



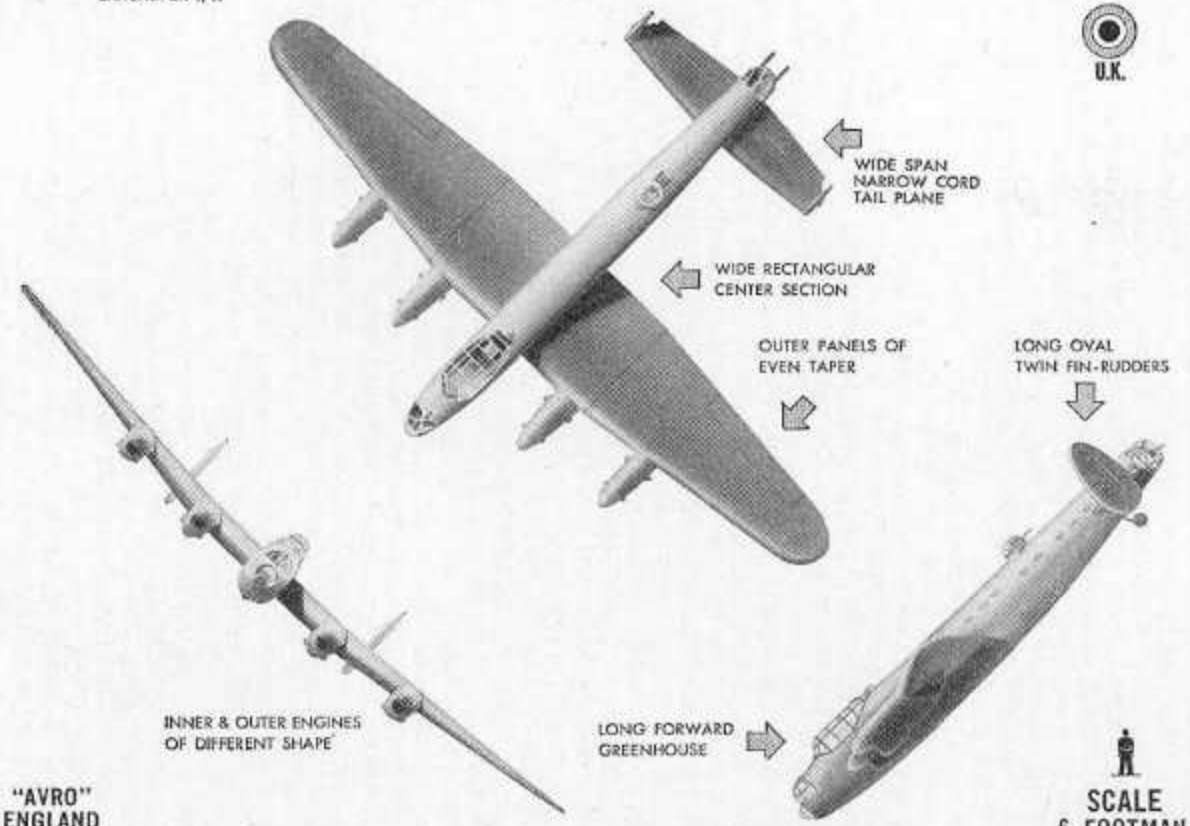
D



R. A. F.: LANCASTER I
LANCASTER I, II

HEAVY BOMBER

U.K.



"AVRO"
ENGLAND

SCALE
6- FOOTMAN

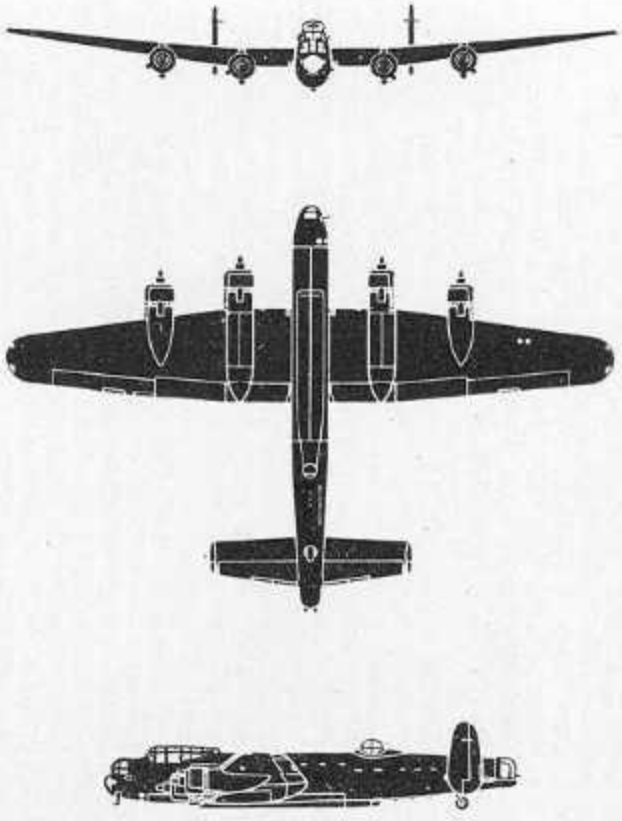
DISTINGUISHING FEATURES: Mid - wing monoplane. Slight dihedral on outer wing panels. Four in-line engines underslung. Wings equally tapered on outer panels with round tips. Long boxlike fuselage with cockpit enclosure set well forward and prominent tail turret aft. Tall oval twin fins and rudders set outboard of tail plane.

INTEREST: The existence of this 30-ton long range heavy bomber was not publicized until it participated in a daring daylight raid in 1942 on the Diesel works which were producing engines for submarines at Augsburg, Germany. Reputed to be one of the easiest of contemporary aircraft to build, it is now in large scale production. It has an outside range of nearly 3,000 miles. It can carry a bomb load of over 6 tons. This bomber carries machine guns in 4 power turrets. The Lancaster I is powered by liquid cooled in-lined engines, while the Mark II has air cooled radials.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

"LANCASTER"

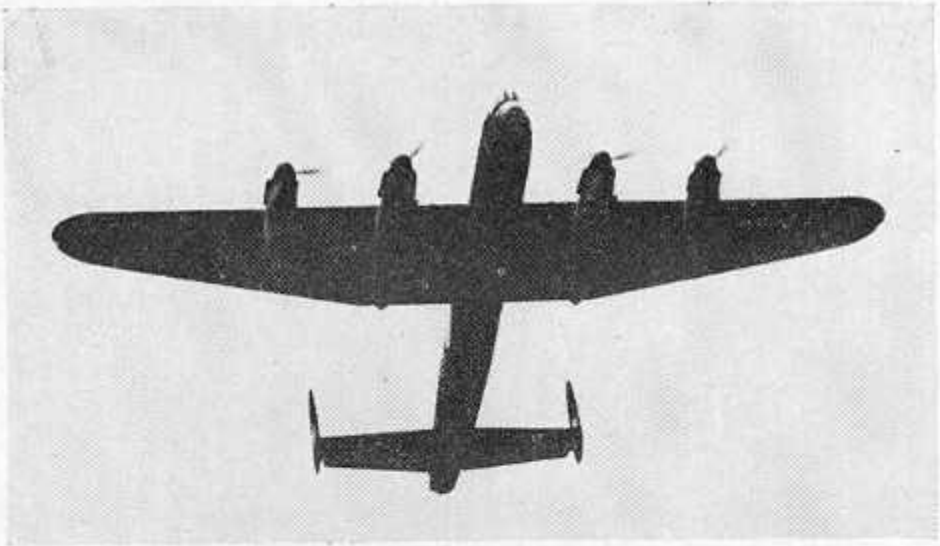


SPAN: 102 ft.
LENGTH: 69 ft. 6 in.
MAX. SPEED: 280 m. p. h.

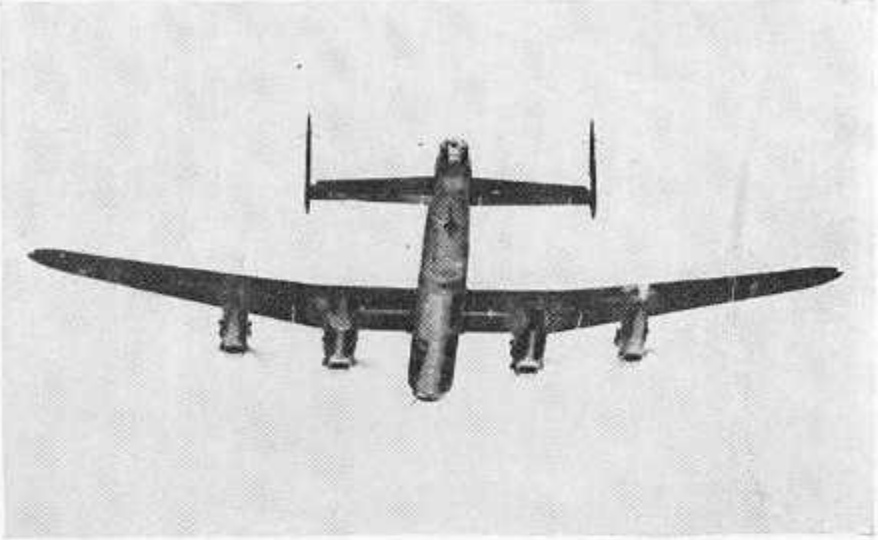
SERVICE CEILING:
25,800 ft.

RESTRICTED

A

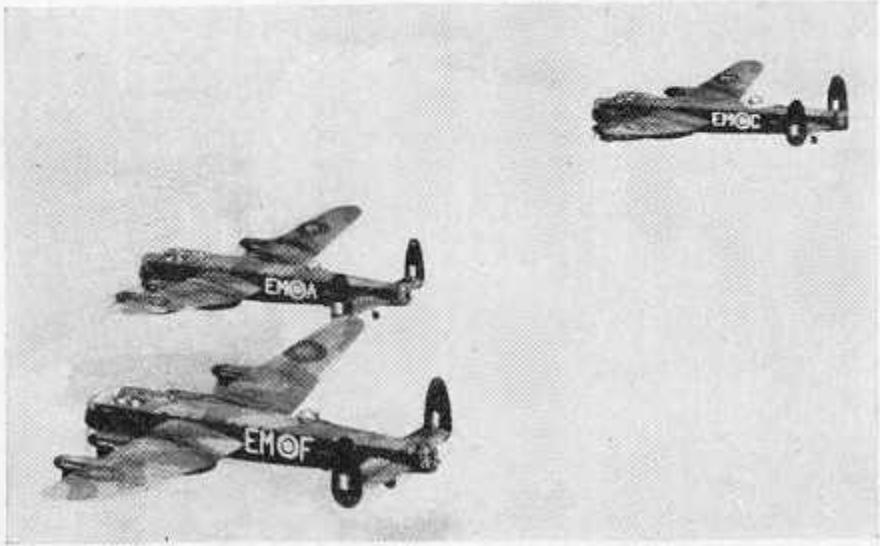


C



B

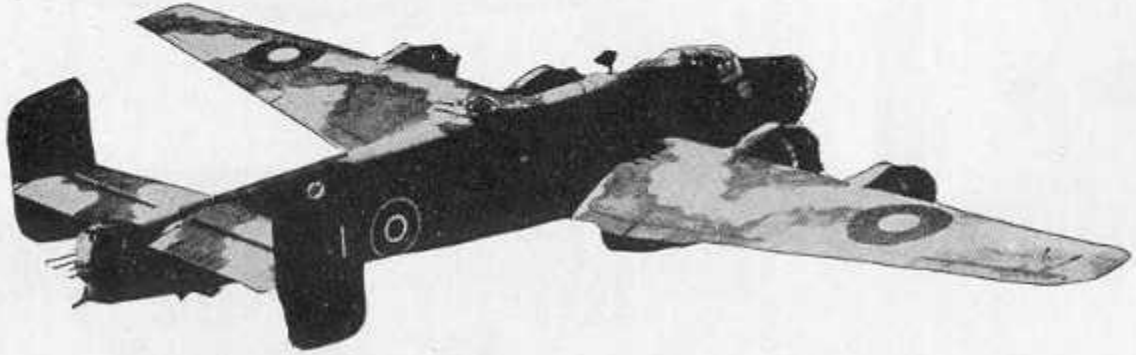
D

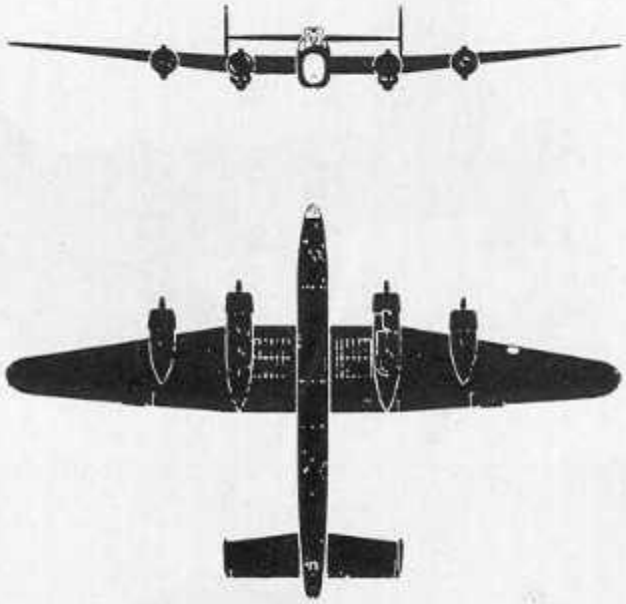


HEAVY BOMBER
GLIDER TUG

U. K.

HALIFAX III





R. A. F.
HANDLEY-PAGE
ENGLAND

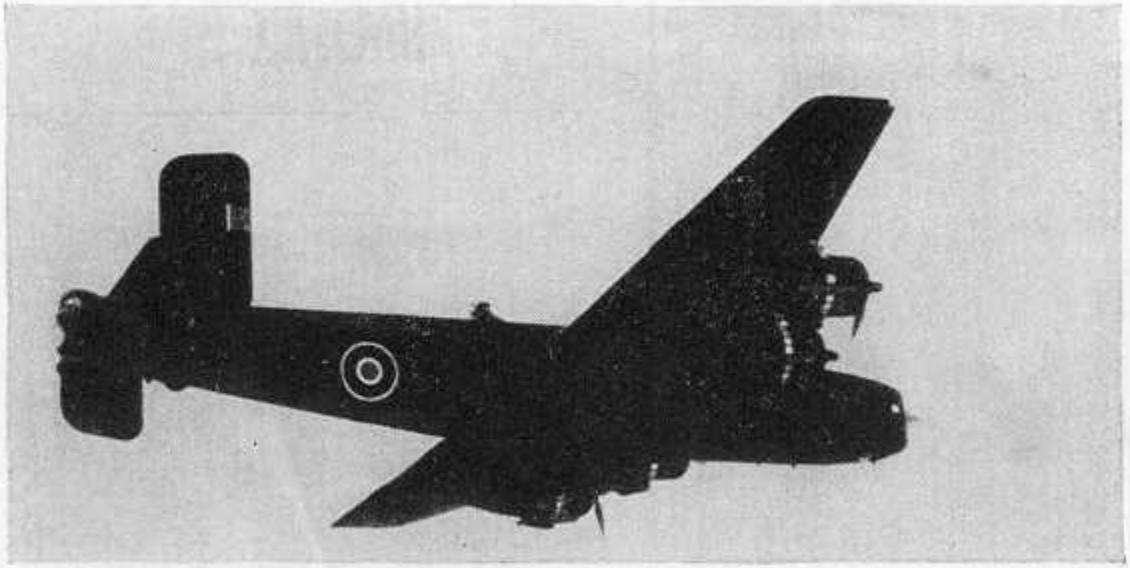
DISTINGUISHING FEATURES: A number of marks of the Halifax now flying differ very considerably from one another in appearance. Mark III is currently the most important. Mid-wing monoplane with four engines, in-line or radial. Sharp taper on wings outboard of inner part of engines, rounded tips (on later marks only). Fuselage typical of British heavy bombers except for glazed, stream-lined nose. High tail-plane on Halifax helps distinguish it from Lancaster with low-set tailplane. Heavy-looking fin and rudder with dead straight leading edge is unusual. Later models of this mark now in operation with rounded wing tips, as shown in silhouettes.

INTEREST: The Halifax and the Lancaster have been the mainstay of RAF Bomber Command's attack on Germany. The two aircraft are very similar in performance. If silhouettes of the latest Halifax III are placed side by side with those of the original Halifax I, they would scarcely be recognizable as the same airplane, but even with different nose, wings and fins a Halifax is always a Halifax. Photographs A and B are of Mark III; photographs C, D and E show Mark II.

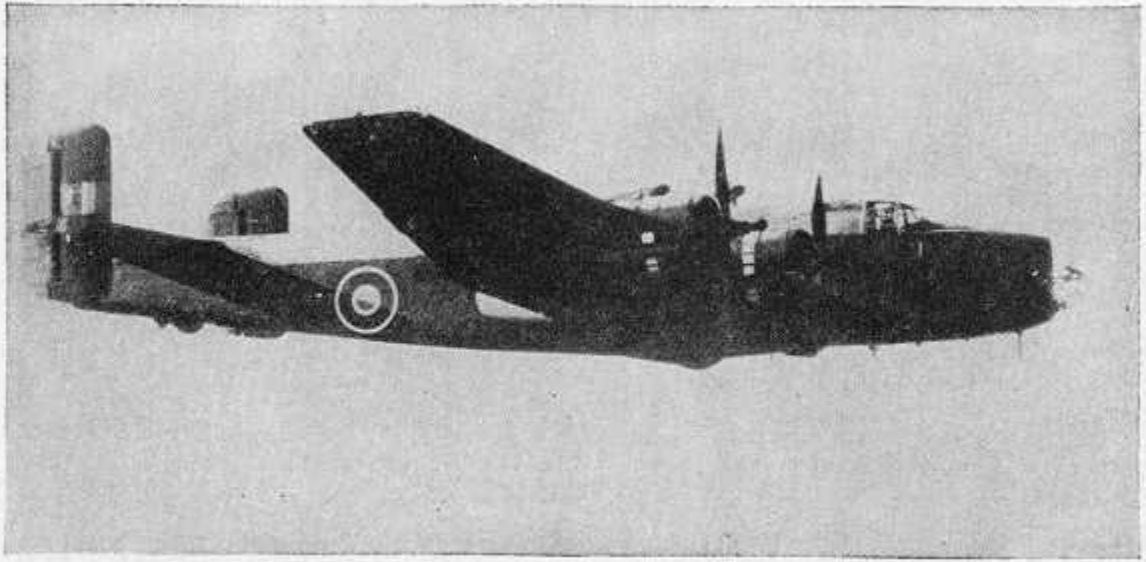
SPAN: 104 ft. 0 in.
LENGTH: 71 ft. 7 in.
MAX. SPEED:

SERVICE CEILING:

RESTRICTED



A



B

C

D

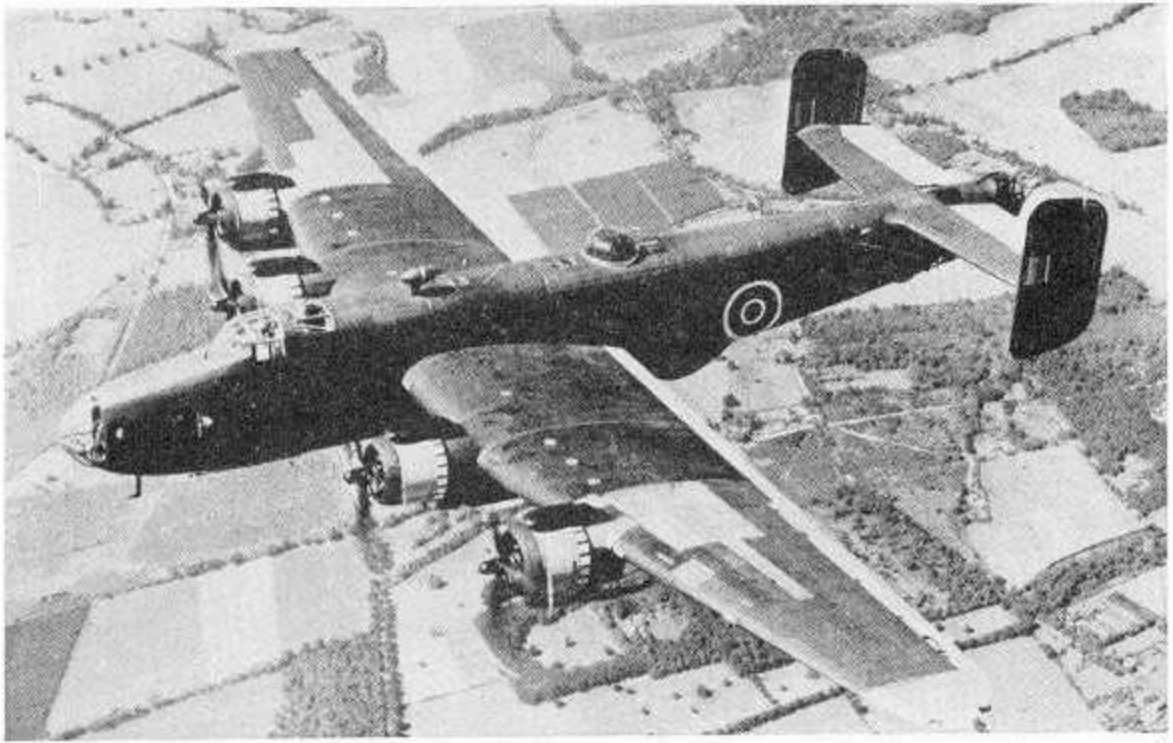
E

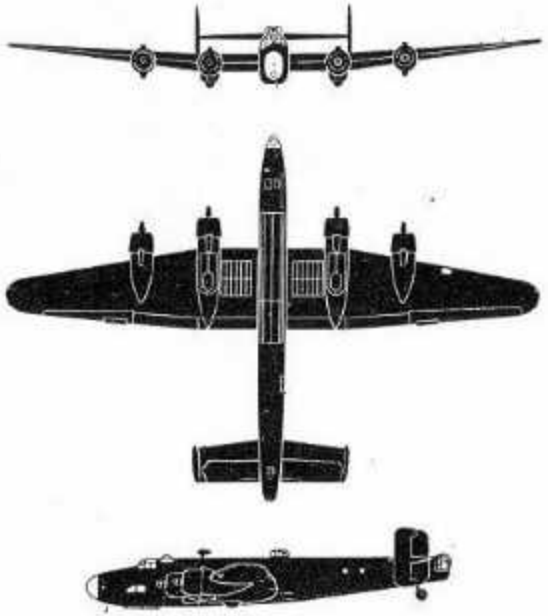
RAF
HANDLEY-PAGE
ENGLAND

HEAVY BOMBER

U. K.

HALIFAX





SPAN: 104 ft. 0 in. **SERVICE CEILING:** 22,000 ft.
LENGTH: 70 ft. 1 in.
APPROX. MAX. SPEED: 275 mph at 19,500 ft.

DISTINGUISHING FEATURES: Four-engine, midwing monoplane with twin fins and rudders. Wings taper from inboard engines to rounded tips. Boxlike fuselage typical of British heavy bombers. Long, rounded nose and heavy projecting tail turret. Fins and rudders nearly rectangular with vertical leading and trailing edges.

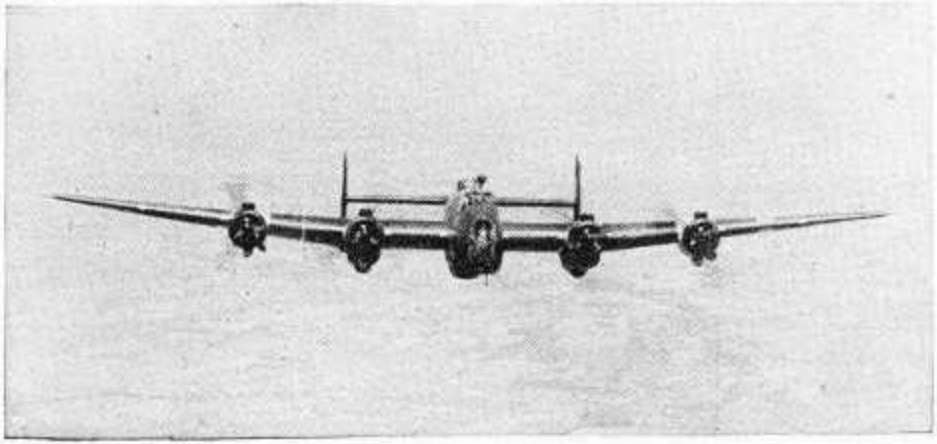
INTEREST: The Halifax, in service since 1941, and the Lancaster have carried the brunt of the RAF Bomber Command's attack on Germany. The Halifax III is virtually a new type compared to the earlier Halifax I. Later Halifax II's are similar to the Mark III's except that they are powered by in-line instead of radial engines. Silhouettes are of Mark III, while photographs are of Mark VII which is recognitionally the same.

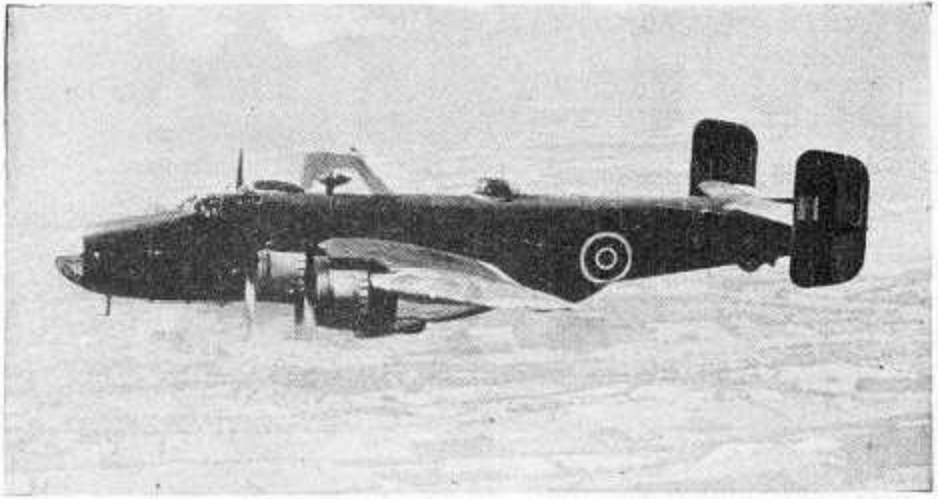
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

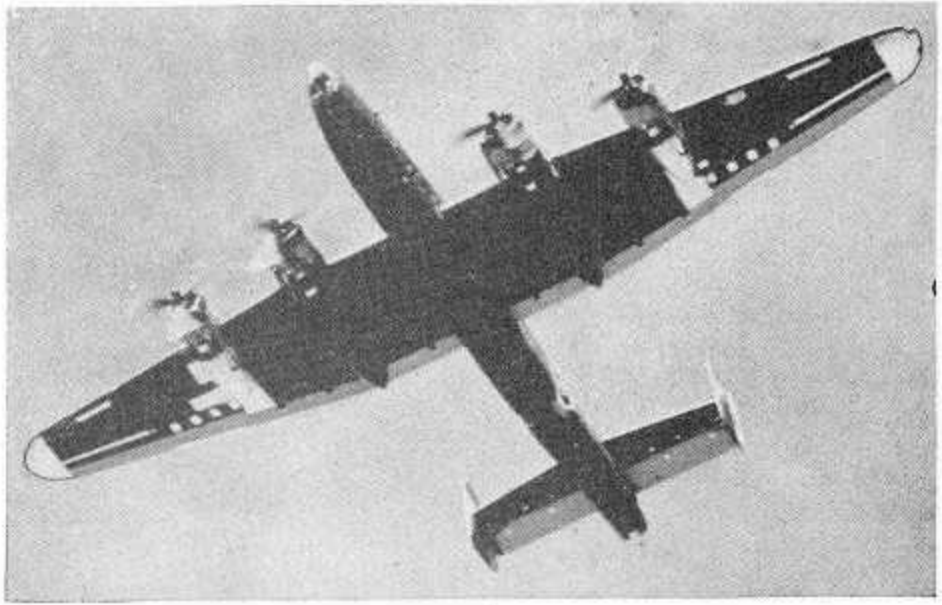
RESTRICTED

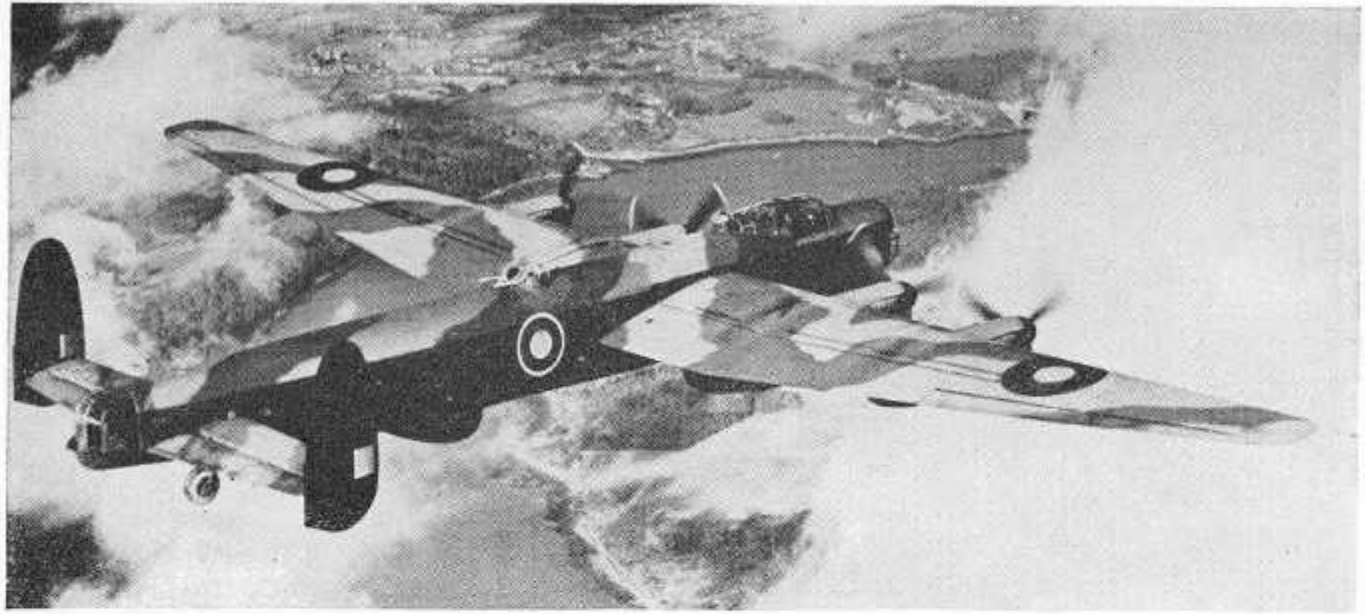
A ▲ B ▼





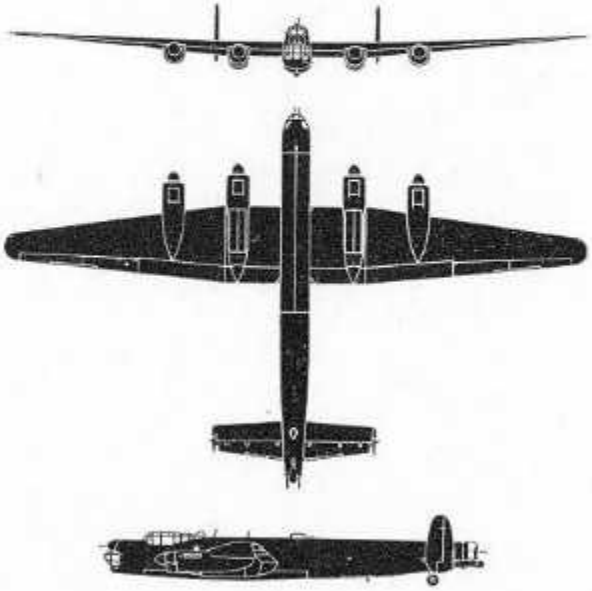
C ▲ D ▼





LINCOLN

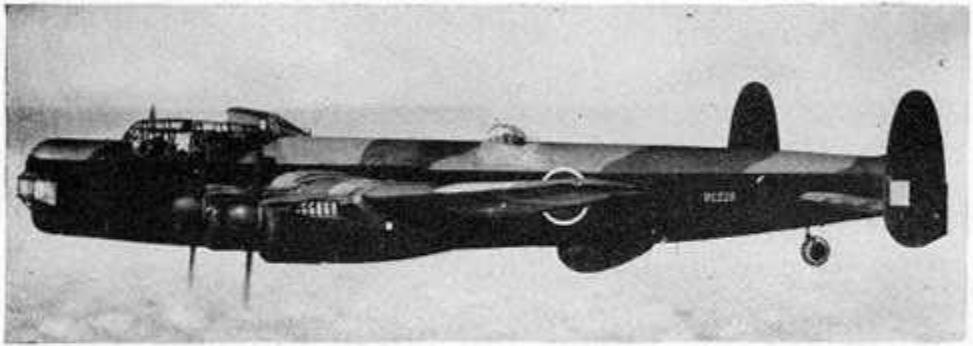
UNITED KINGDOM

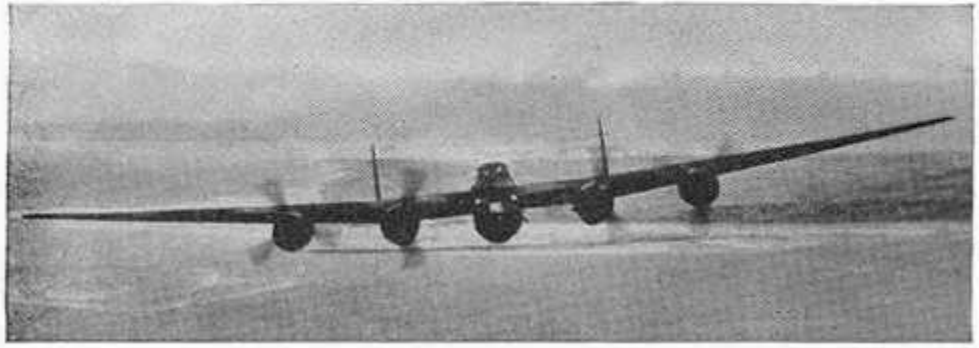


INFORMATION The Lincoln heavy bomber is a development from the familiar Lancaster. It is a larger plane and the Mk.I is powered by 4–1635 horsepower Rolls Royce Merlin 85 engines. The plane is built in sections to facilitate manufacture. Cruising at 200 m.p.h. it has a range of 4,450 miles with a 3,000 pound bomb load and a range of 2800 miles with a 14,000 pound bomb load.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
120'	78'–4"	82,000	310/18,300			see above

APRIL 1946 **RESTRICTED**

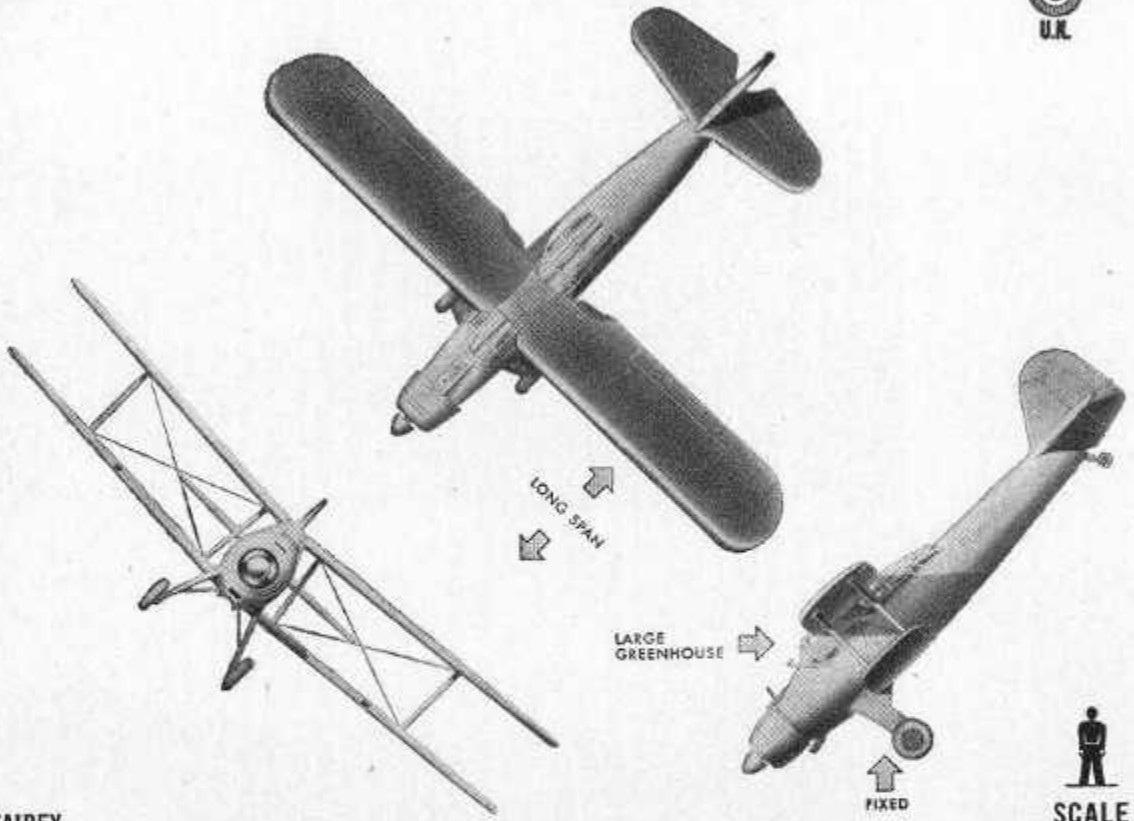




F. A. A.: ALBACORE

TORPEDO BOMBER

U.K.



FAIREY
ENGLAND

SCALE
6-FOOT MAN

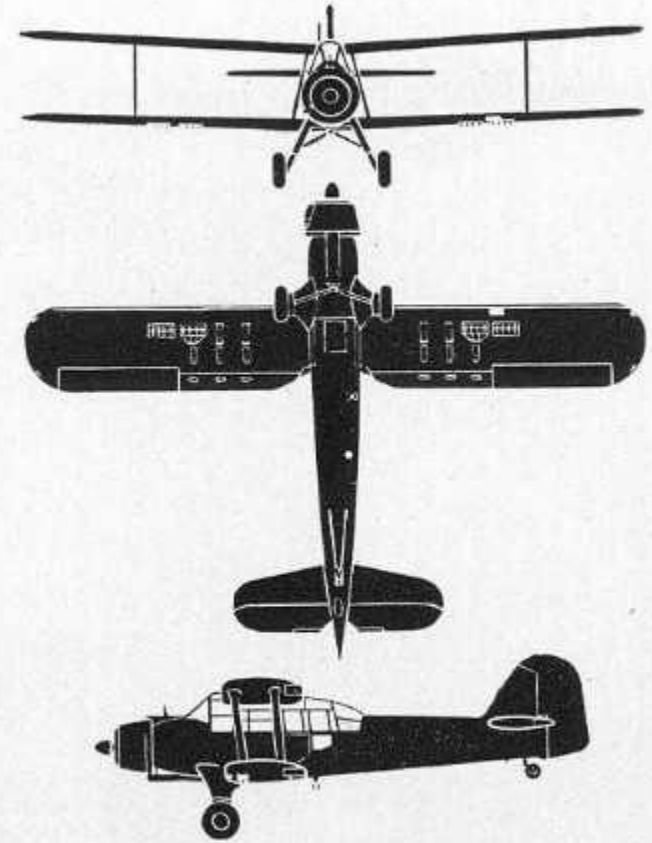
DISTINGUISHING FEATURES: Single bay bi-plane with radial engine. Straight, round tipped wings of equal span. Fixed landing gear. Long high greenhouse. Large single fin and rudder with rounded top.

INTEREST: Nicknamed by the British "The Applecore," this three-place aircraft was designed for operation from carriers or, on floats, from cruisers. Relatively slow and maneuverable, it is well adapted to the diving approach used by the British Fleet Air Arm in daylight torpedo attacks. Developed from the "Swordfish" it is being used to replace that torpedo bomber until modern torpedo carrying aircraft, now being developed, come into use. Compared to most present day torpedo bombers, the Albacore is an obsolete aircraft.

APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

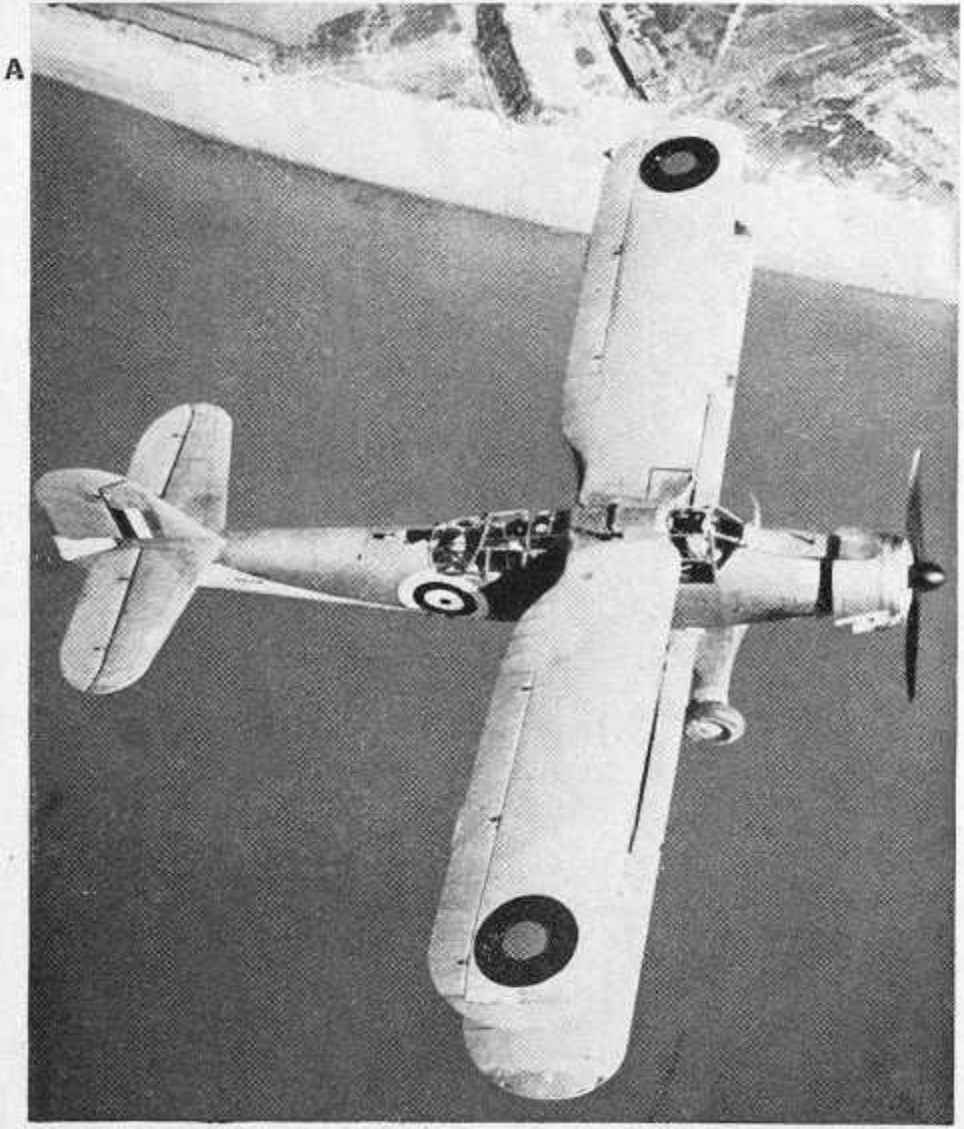
"ALBACORE"



SPAN: 50 ft.
LENGTH: 40 ft.
MAX. SPEED: 172 m. p. h. at 4,800 ft.

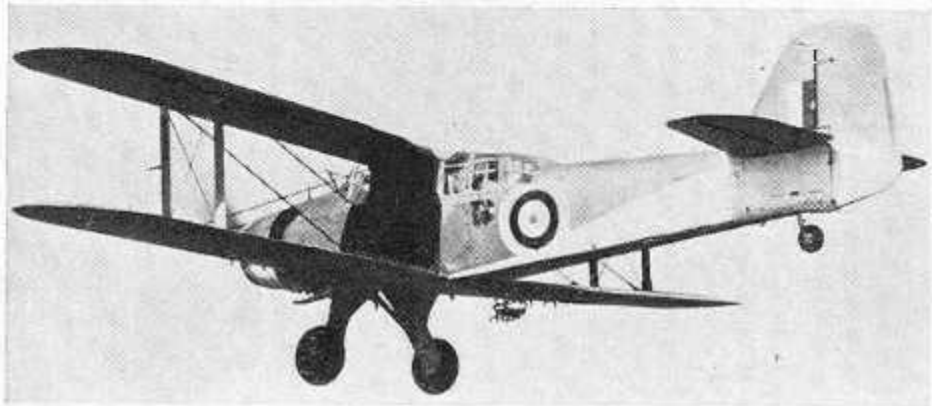
SERVICE CEILING:
18,000 ft.

RESTRICTED



A

B

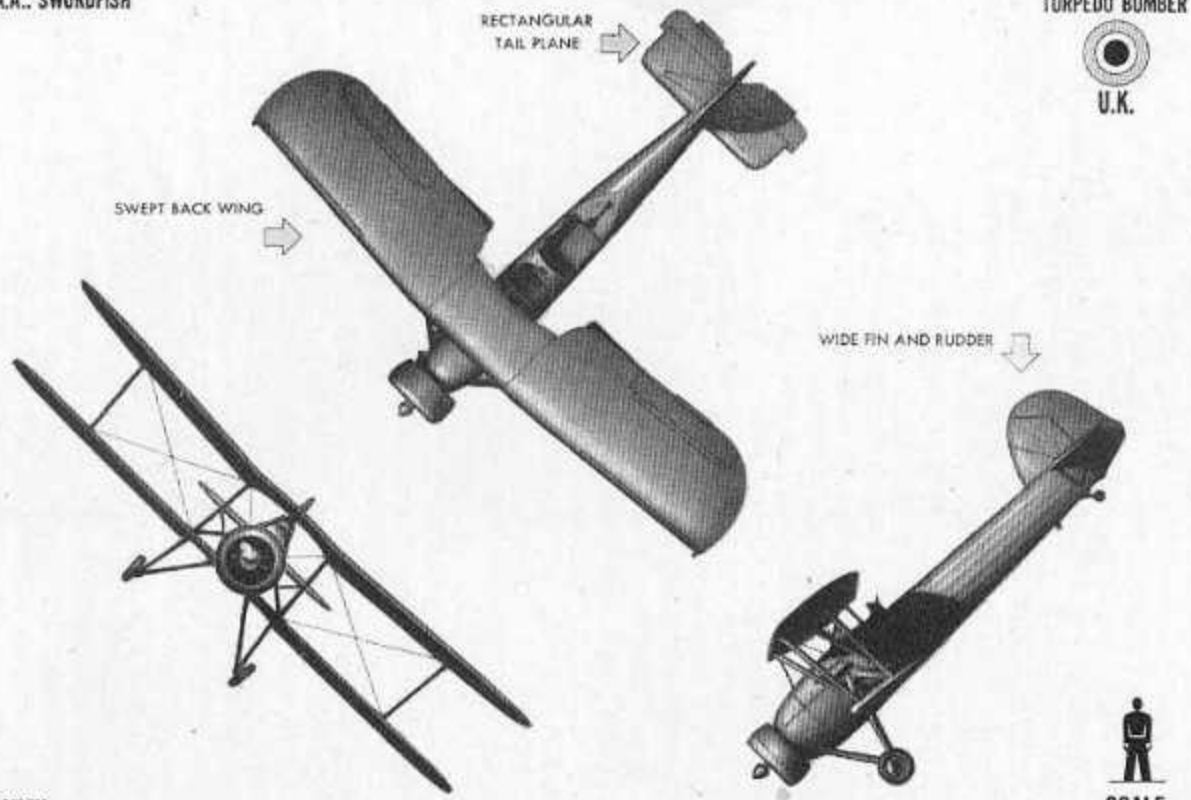


C

D

TORPEDO BOMBER

U.K.



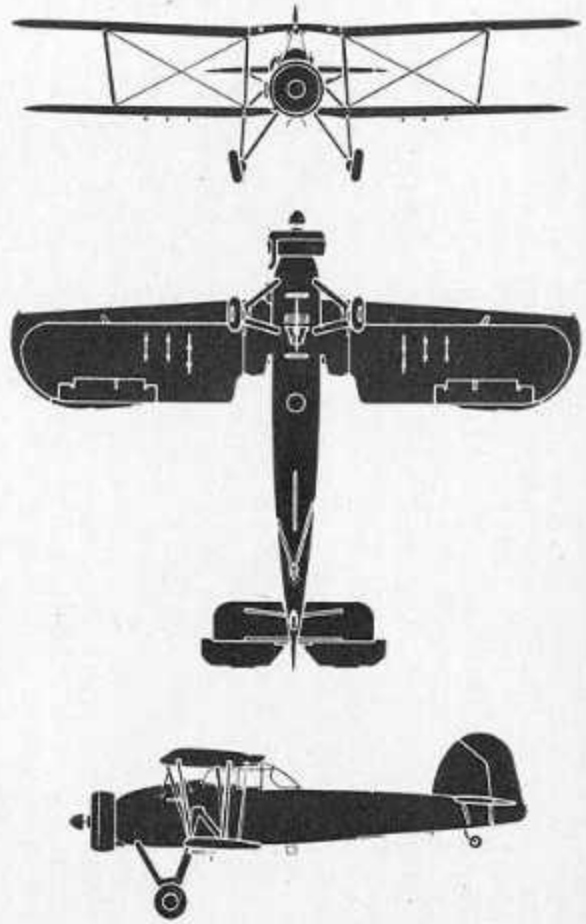
SCALE
6-FOOT MAN

FAIREY
ENGLAND

DISTINGUISHING FEATURES: Single radial engine biplane. Wings have a slight stagger. Bottom wing is shorter and has no dihedral. Top wing has a swept-back appearance with large cut-out in the center. Prominent ring cowling. Semi-circular fin and rudder. Strut-braced tailplane has elevator with large cut-out in center. Elevator extends beyond horizontal stabilizer. Stabilizer has straight leading edge.

INTEREST: The Fairey Swordfish is used by the British Fleet Air Arm for torpedo, spotter, and reconnaissance work. It is sometimes used with twin floats for catapult operations from cruisers and battleships. The carrier version with fixed landing gear is used more extensively. It has a fixed gun firing forward. Older models of this plane have open cockpits for the pilot, observer, and gunner behind the wings. Recent models, however, have a large enclosed cockpit.

SWORDFISH

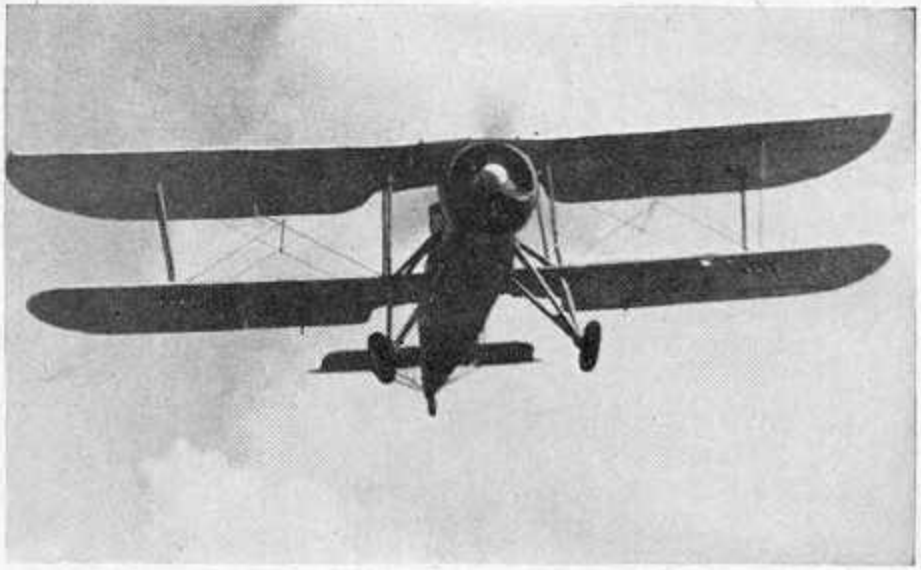


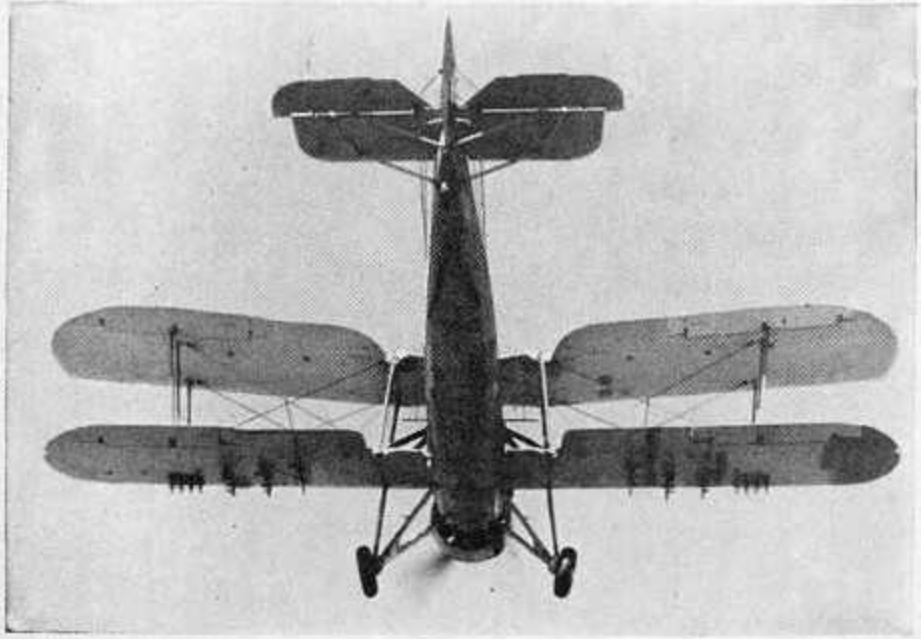
SPAN: 45 ft. 6 in.
LENGTH: 36 ft. 4 in.
MAX. SPEED: 144 m. p. h. at 5,500 ft.
SERVICE CEILING: 17,000 ft.

RESTRICTED

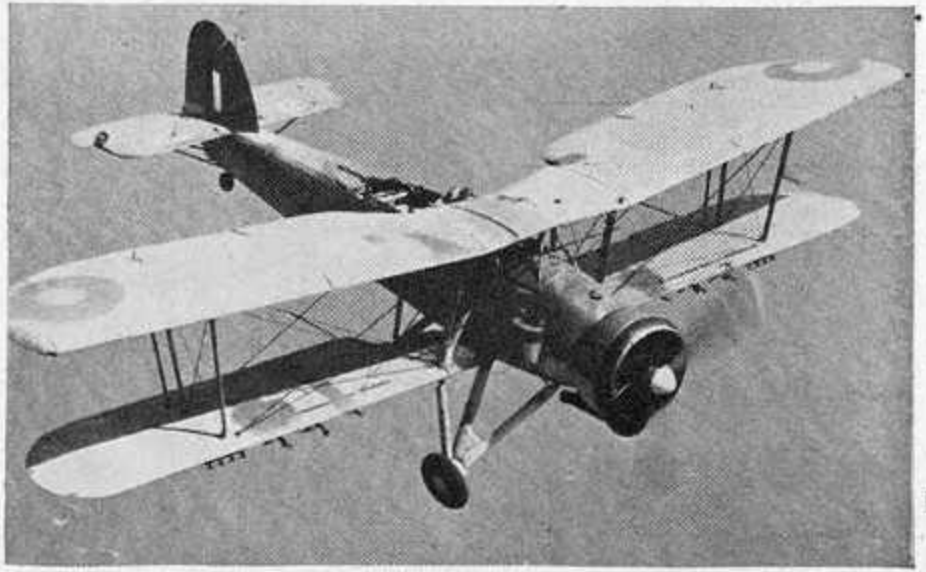
A

C

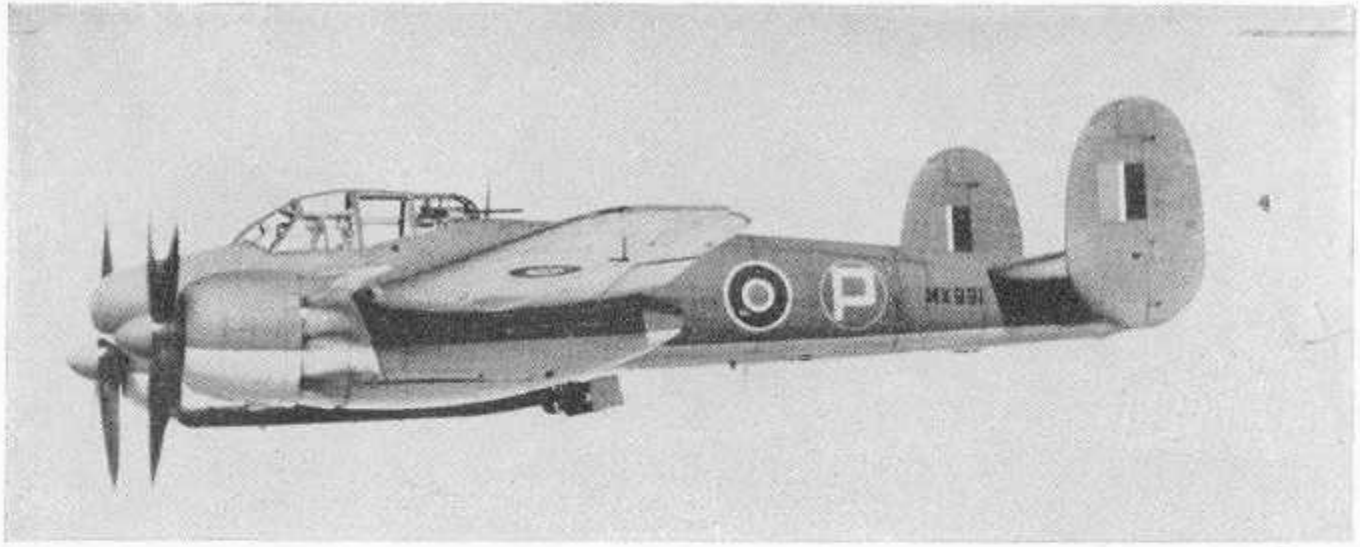




B

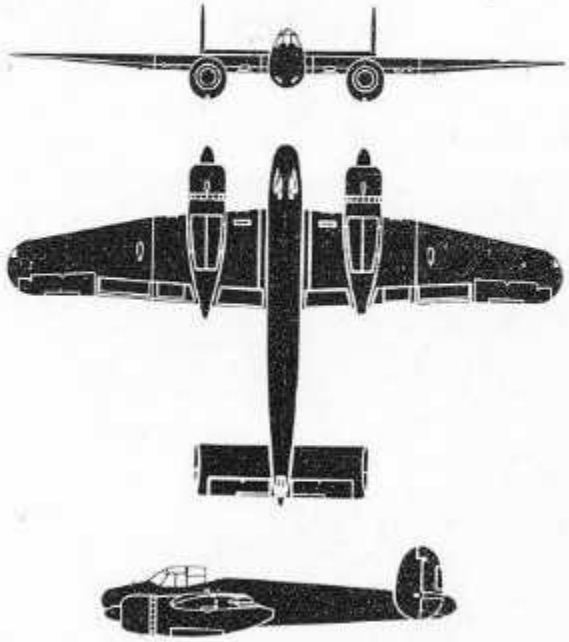


D



BRIGAND

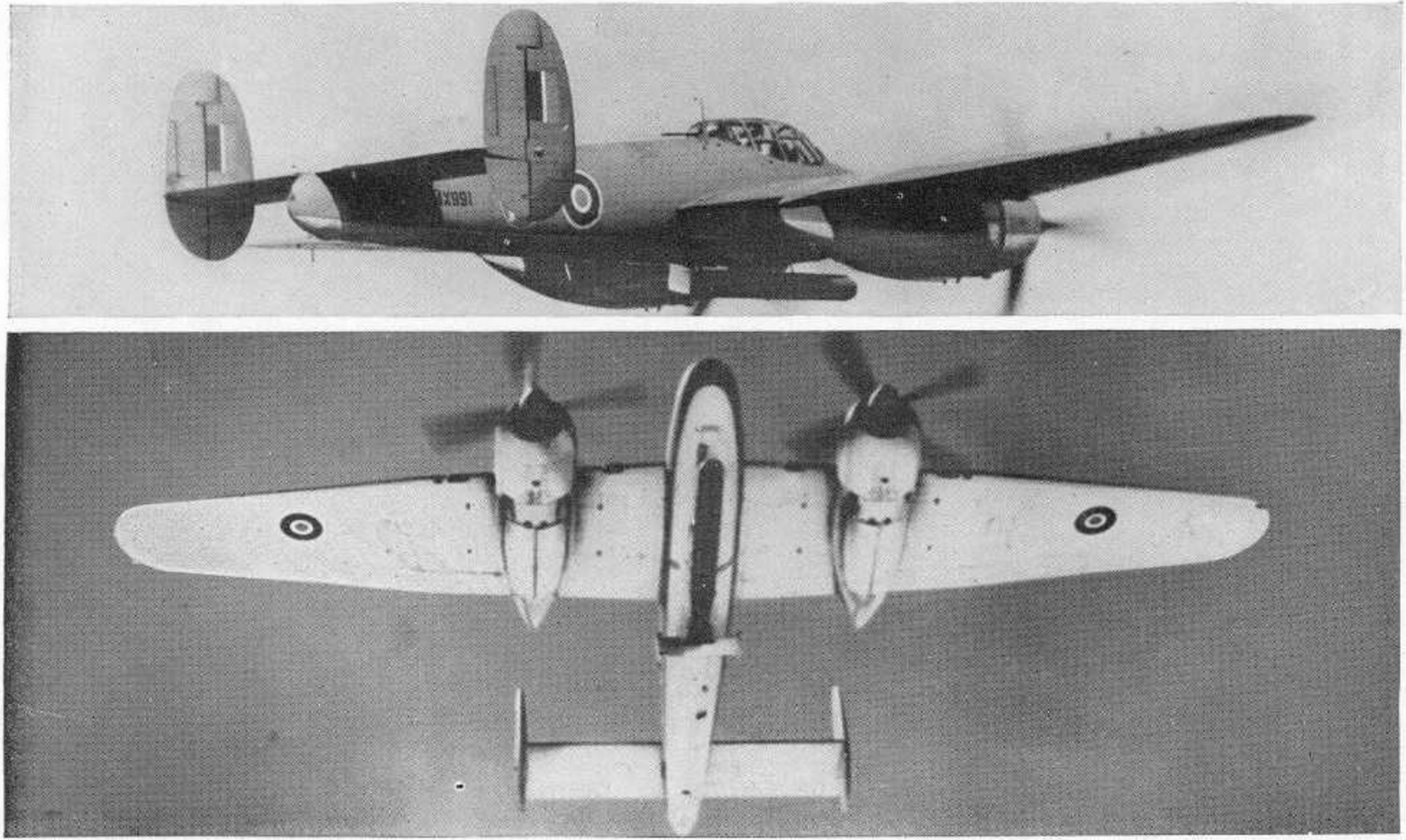
UNITED KINGDOM



INFORMATION The Brigand is a twin engine, long range, torpedo fighter. Powered with 2 Centaurus 57 engines it is fitted with dive brakes, water injection, four bladed propellers, bullet proof glass, and is designed for maximum power at low altitude. For armament the plane carries 4–20mm fixed guns and a rack for carrying a torpedo externally. Carrying a crew of three, the Brigand can increase its range to 2375 miles by using a 200 gallon drop tank in addition to its torpedo and rockets. Featured are its underslung nacelles, high twin tail with oval rudders, and neatly tapered fuselage.

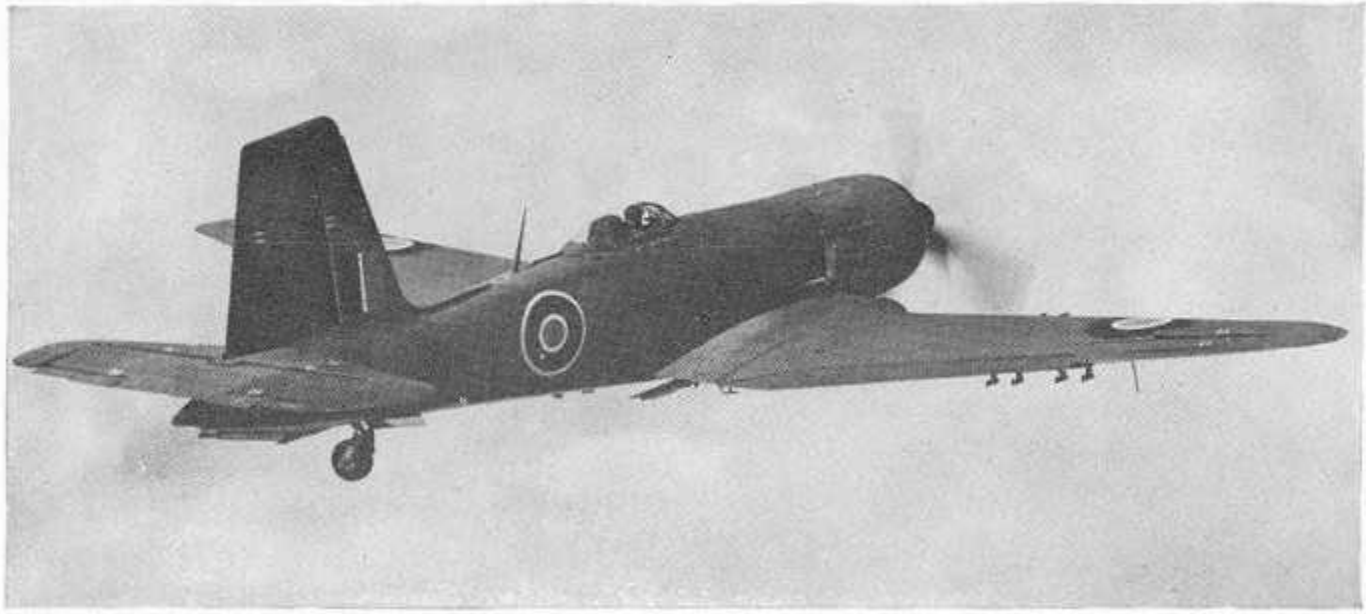
DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.–ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
72'–4"	46'–5"	38,200	358/13,700	initial 1,500	26,000	1,980

APRIL 1946 RESTRICTED



FIREBRAND IV

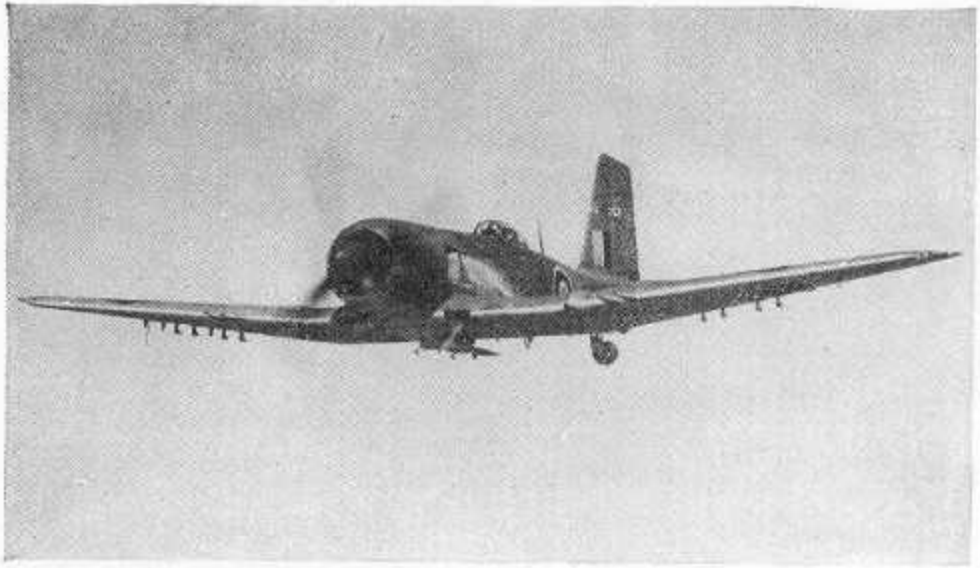
UNITED KINGDOM

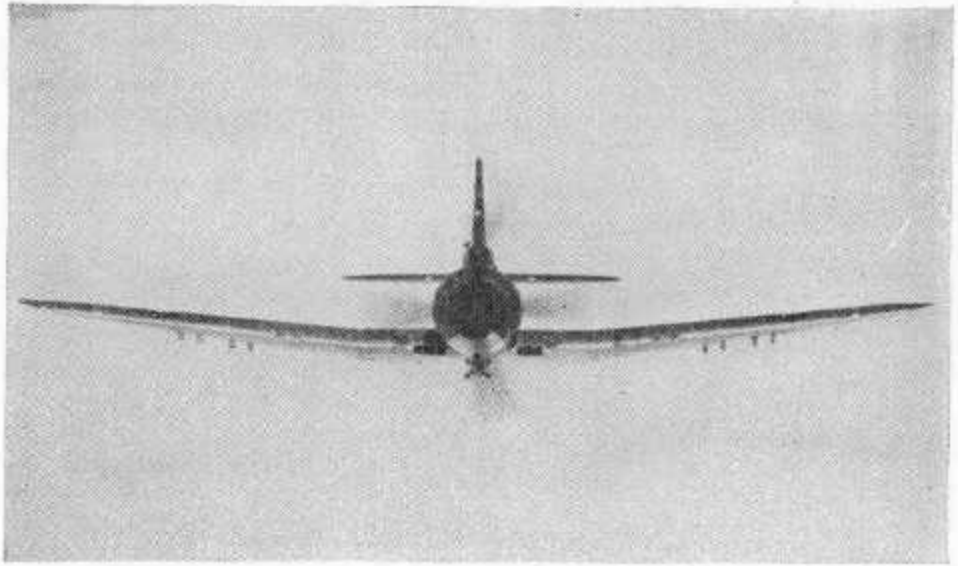


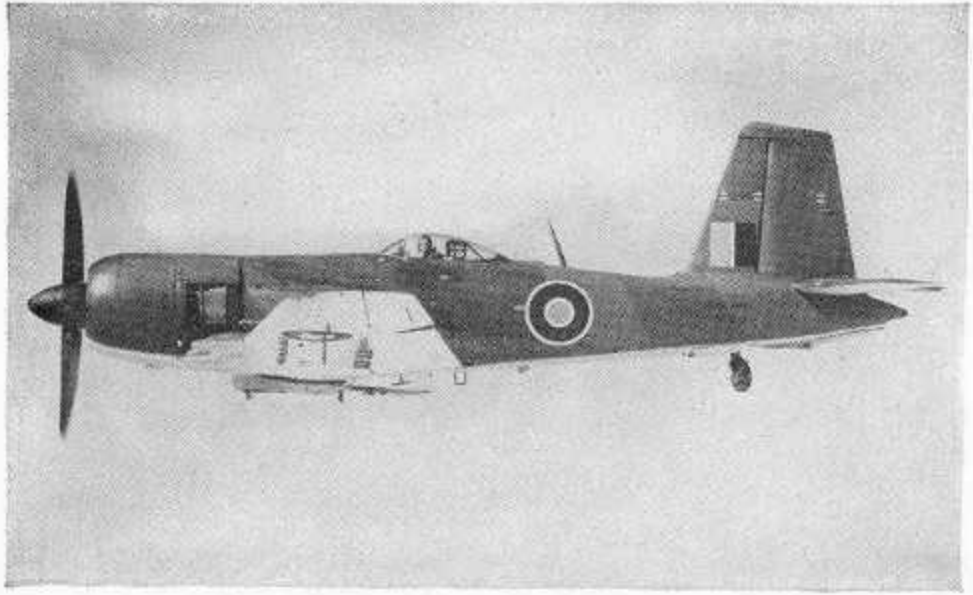
INFORMATION The Firebrand is a single seat, carrier-based, torpedo fighter. Powered with a Centaurus IX engine the plane is equipped with dive brakes and racks for carrying drop tanks, bombs, or a torpedo, all externally. Armament is 4–20mm fixed guns. Recognition features a long straight nose and a high, large, squared off rudder.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.–ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
51′–3″	37′–6″		302/12,500		31,500	1,370

APRIL 1946 RESTRICTED





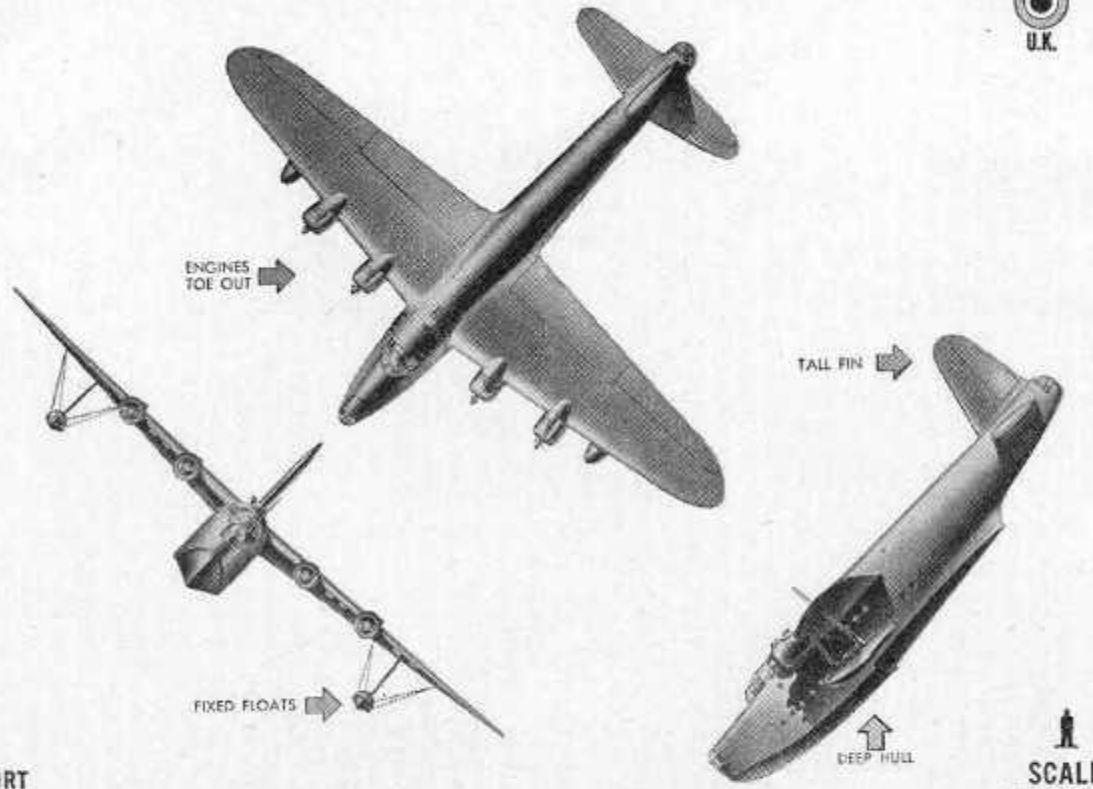


R. A. F.: SUNDERLAND I, II

PATROL BOMBER

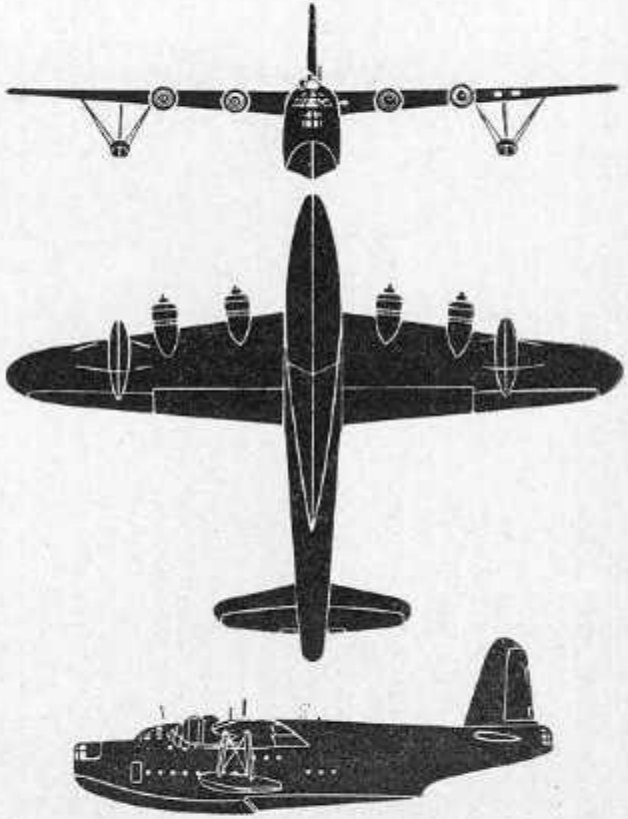
U.K.

"SUNDERLAND"



SCALE
6-FOOT MAN

SHORT
ENGLAND



DISTINGUISHING FEATURES: High-wing four-engined monoplane. Very slight dihedral to a thick tapered wing. Deep hull with **V** bottom and rounded top. Two steps lead up to narrow tail, housing a gun position. Four radial engines have small nacelles. Stabilizer and elevator similar in shape to wing. Tall fin and rudder with leading edge tapered.

INTEREST: This large aircraft has performed many and varied duties. One of its tasks is to patrol the ice far North of the Arctic Circle, reporting movement of the icebergs. It was used in the evacuation of Greece and Crete. These flying boats have cruised far out over the Atlantic protecting convoys to Britain. The Sunderland has shown qualities of reliability and endurance equal to the importance of its duties. A Sunderland forced down in the South Atlantic was towed hundreds of miles by a naval corvette through very stormy weather.

SPAN: 112 ft. 9½ in.
LENGTH: 85 ft. 4 in.
MAX. SPEED: 204 m. p. h. at 5,000 ft.

SERVICE CEILING:
14,100 ft.

RESTRICTED

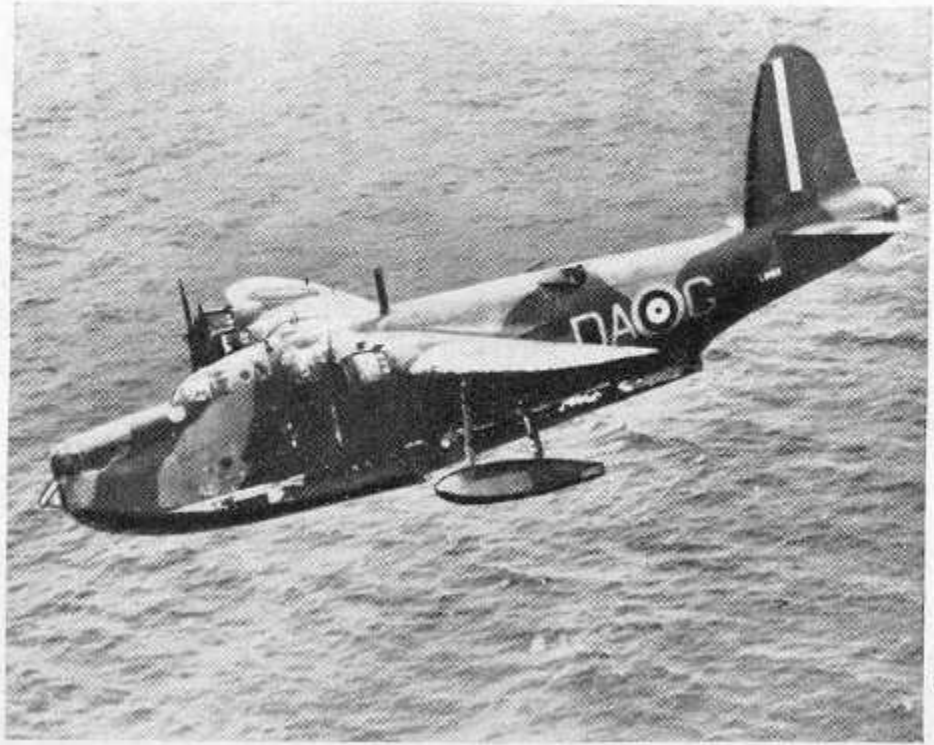
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

A

C

B

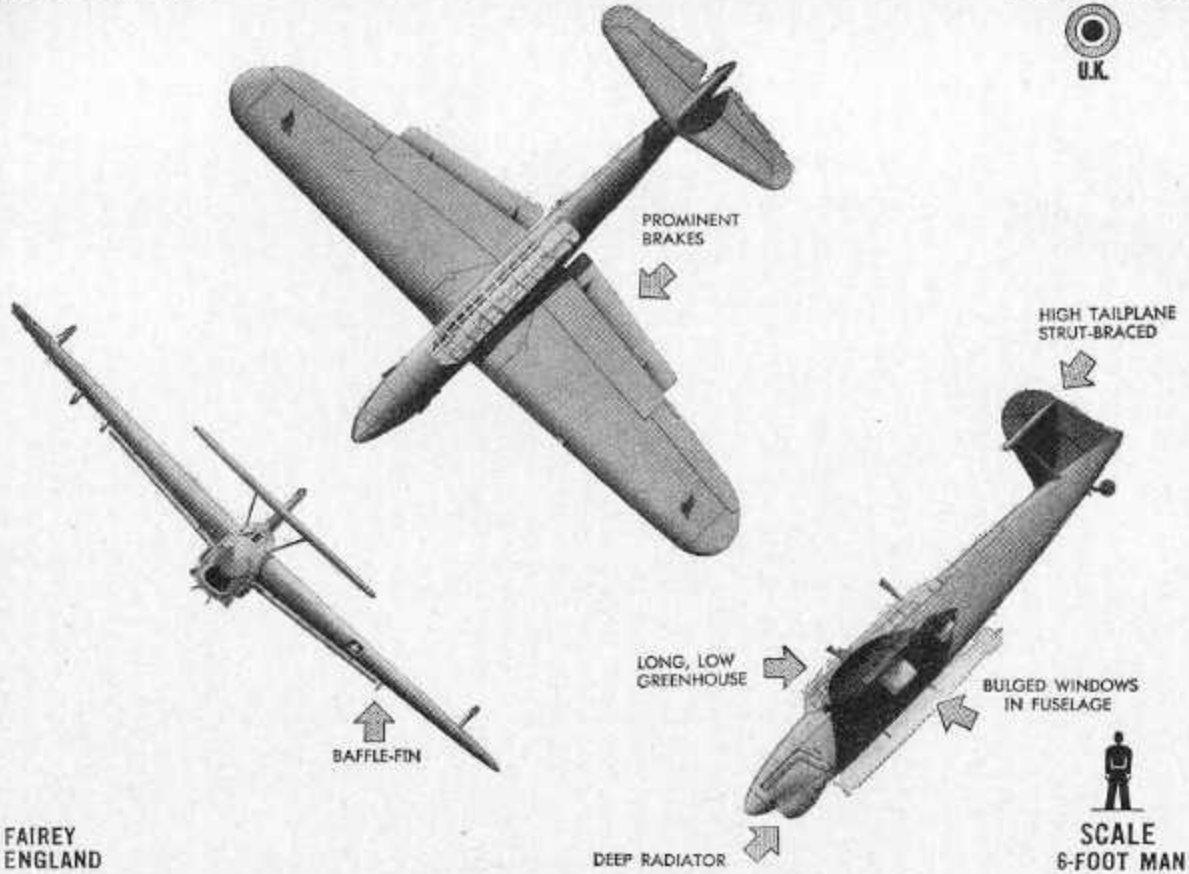


D

F. A. A.: BARRACUDA

RECONNAISSANCE

U.K.



FAIREY
ENGLAND

SCALE
6-FOOT MAN

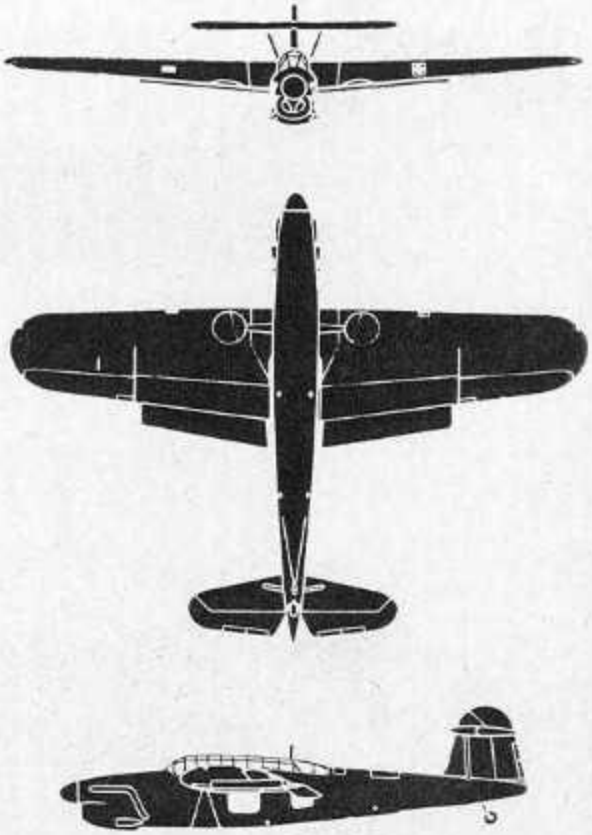
DISTINGUISHING FEATURES: Single in-line engine, high-wing monoplane. Wings have slight dihedral and taper with large rounded tips. Prominent flaps project beyond trailing edge of wings. Narrow diamond-shaped stabilizer and elevator with rounded tips is set high, being mounted on upper part of fin and rudder. Stabilizer is externally braced. Large radiator directly under medium-sized spinner. Fuselage tapers back gradually and has a long sloping cockpit enclosure commencing at leading edge and extending aft of trailing edge of wing. High fin and rudder with rounded top.

INTEREST: This new aircraft is powered with a Rolls Royce Merlin engine. One modification of this plane is in service with fixed landing gear.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

"BARRACUDA"

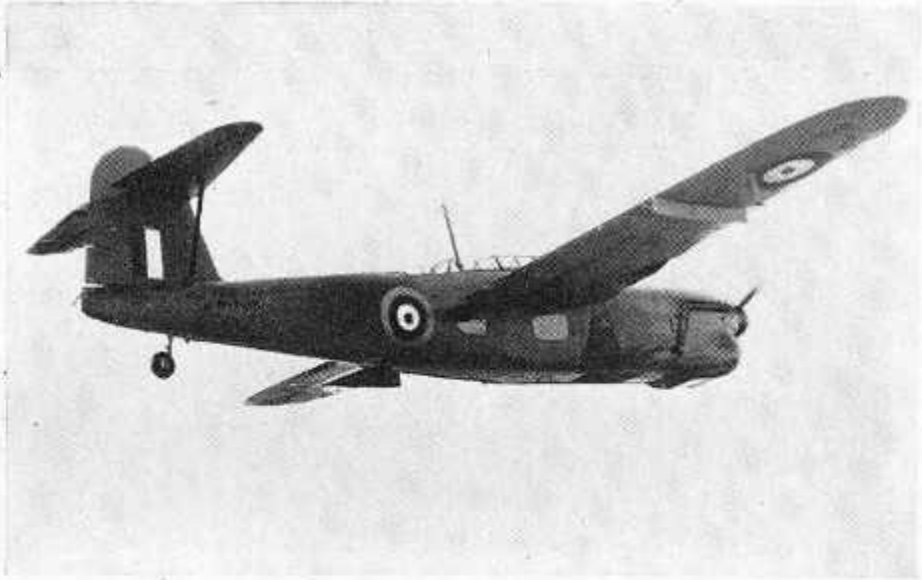


SPAN: 49 ft. 2 in.
LENGTH: 40 ft. 7 in.
MAX. SPEED:

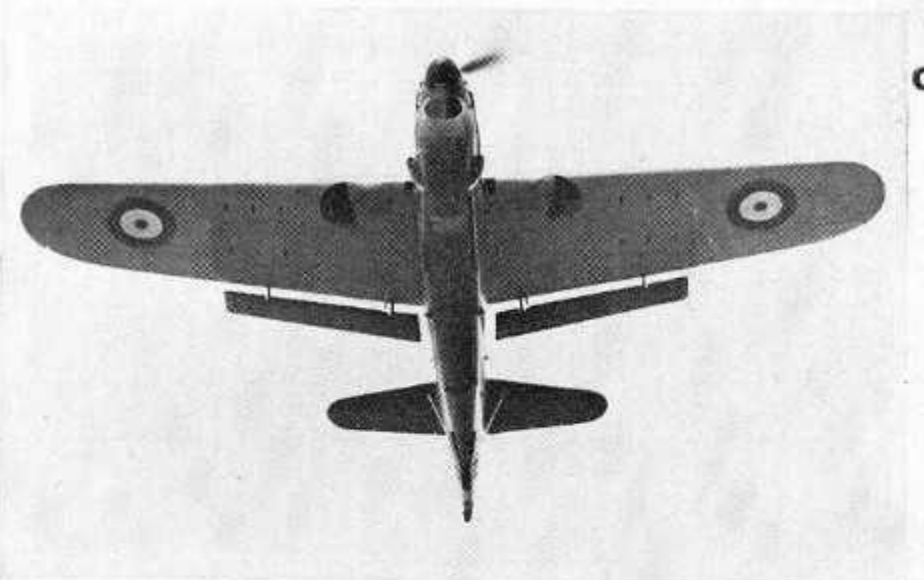
SERVICE CEILING:

RESTRICTED

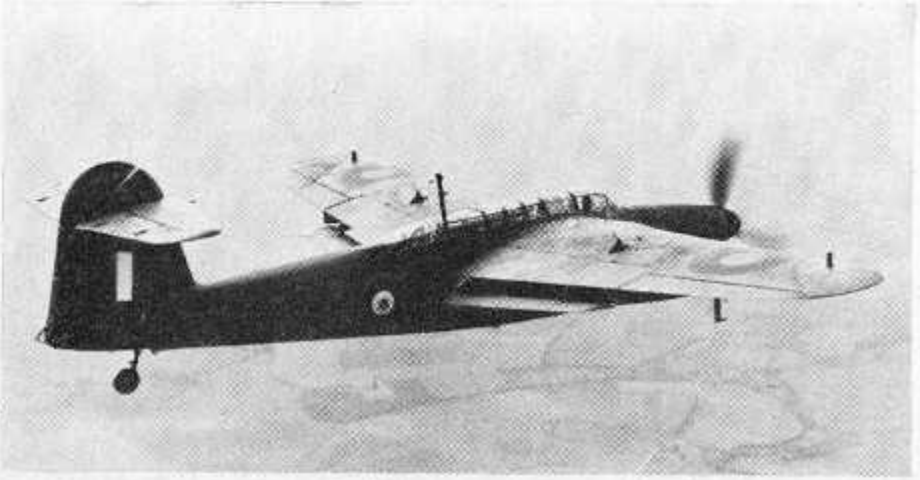
A



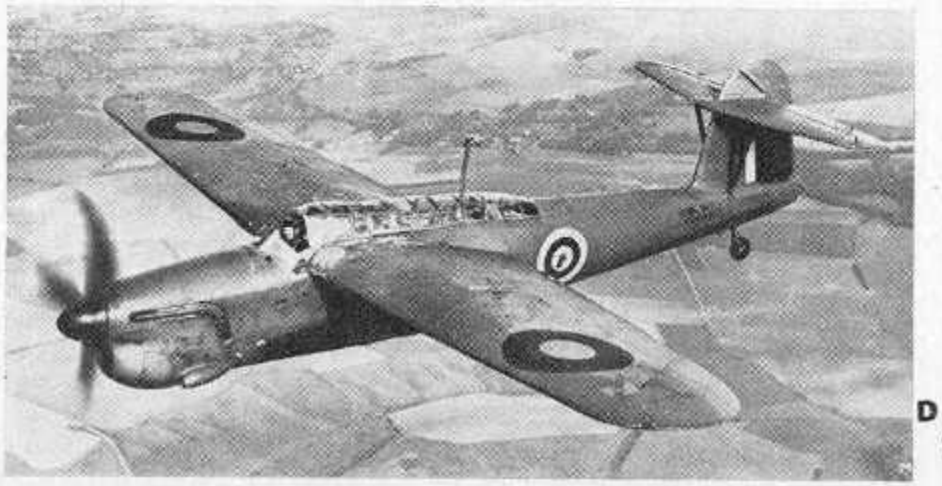
C



B



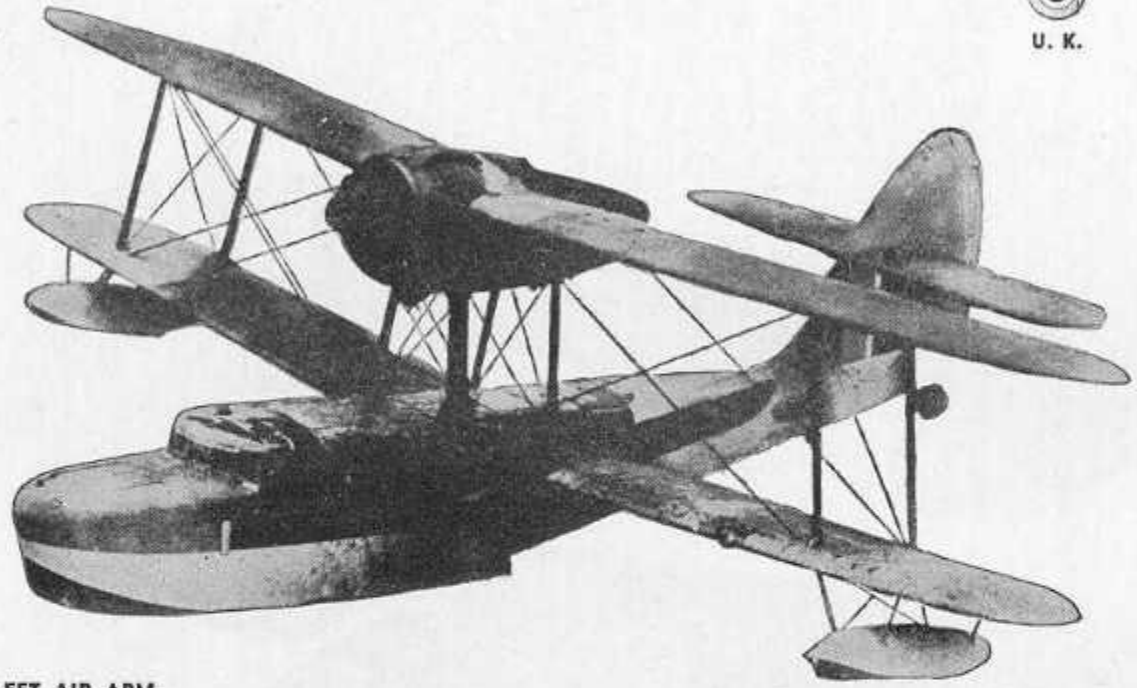
D



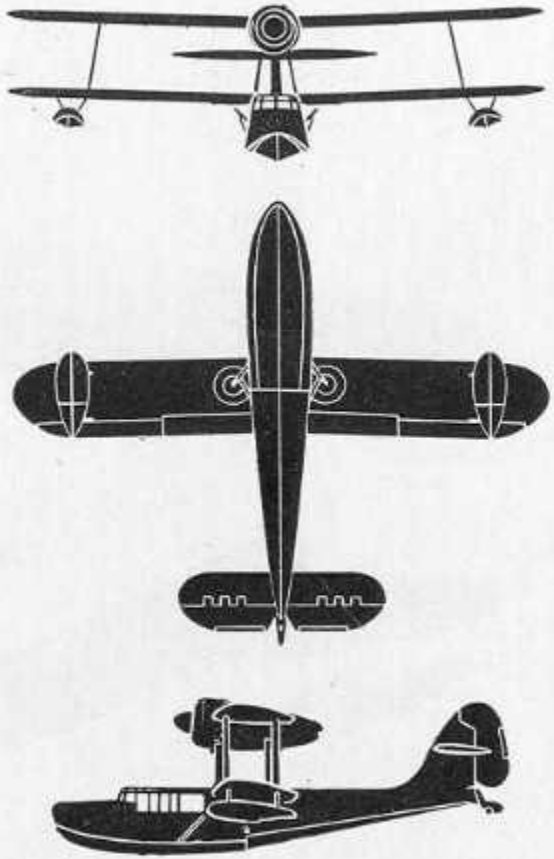
RECONNAISSANCE

U. K.

SEA OTTER



FLEET AIR ARM
SUPERMARINE
ENGLAND



DISTINGUISHING FEATURES: A biplane, flying-boat type amphibian. Once known, the Sea Otter is unlikely to be confused with any aircraft other than its predecessor the Walrus, from which it differs by having a tractor instead of a pusher propeller. In plan view the sweepback of the wing is distinctive.

INTEREST: The Sea Otter is intended to replace the Walrus as the Fleet Air Arm's maid-of-all-work. It is used as a reconnaissance aircraft on most of H. M. Ships from BBs to CAs. It may eventually replace the Walrus in Air Sea Rescue work. It may be used as a flying Admiral's Barge. There is nothing very glamorous looking about the Sea Otter but it is likely to be seen anywhere the Royal Navy operates and should be known.

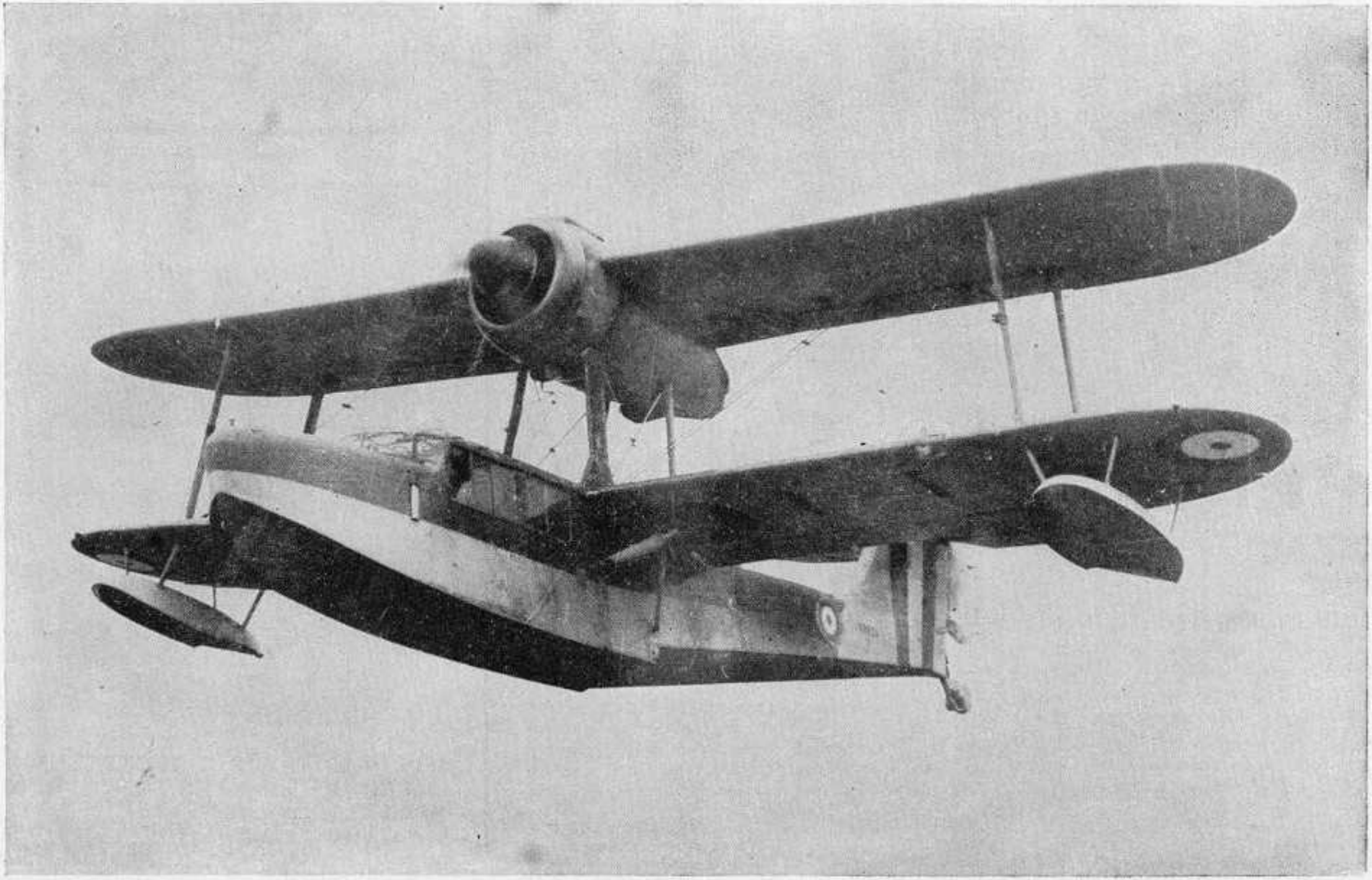
SPAN: 46 ft. 0 in.
LENGTH: 39 ft. 6 in.
MAX. SPEED: 145 m.p.h.
SERVICE CEILING:

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

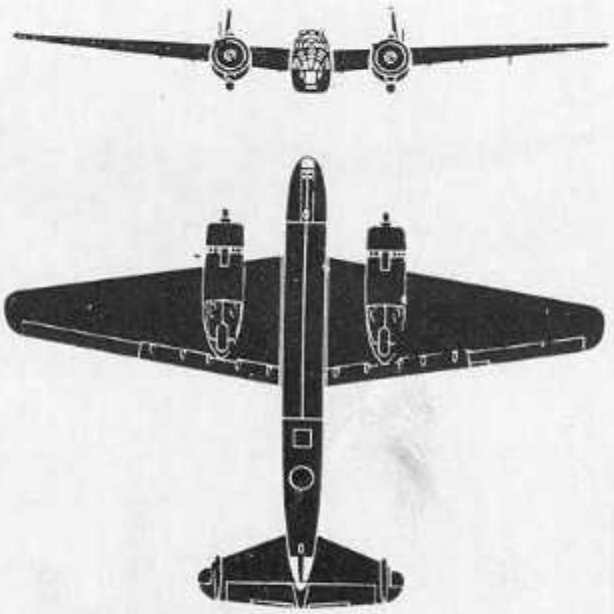
A



TROOP TRANSPORT
GLIDER TUG

U. K.

ALBEMARLE



R. A. F.
ARMSTRONG-WHITWORTH
ENGLAND

DISTINGUISHING FEATURES: The Albemarle is a twin-engine, twin-tail midwing monoplane with the typical British boxcar-shaped fuselage. The wing tapers sharply from a very wide chord at the root, and in head-on view has a marked dihedral starting at the fuselage. The fuselage is bulky and has a long glazed nose and raised cockpit canopy, sometimes with turret aft. An unusually large glassed-in aftersection is close to and below the tailplane. Smooth lines of the oval twin fins and rudders are broken at the bottom. The whole tail assembly is set high on the fuselage.

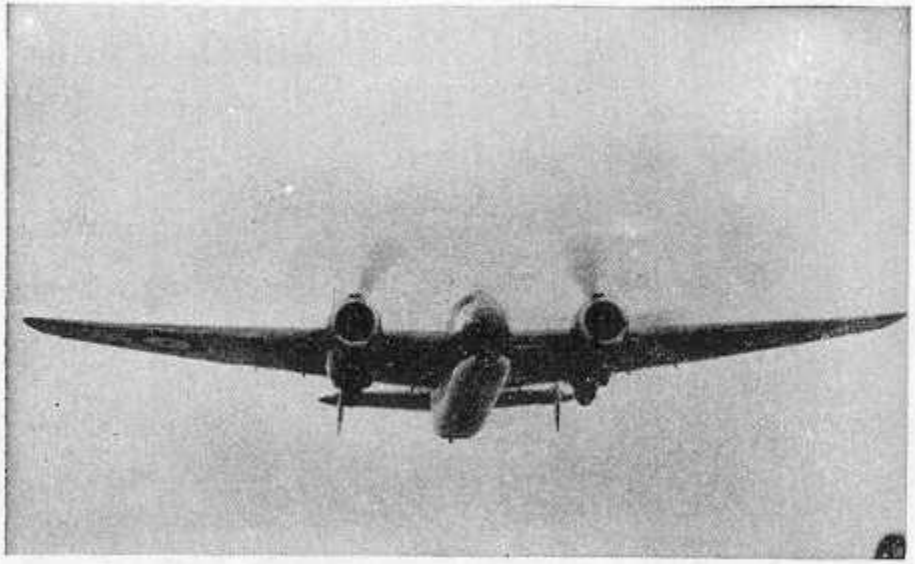
INTEREST: The Albemarle is one of the R.A.F.'s principal transport and glider tug aircraft. Originally designed by Armstrong-Whitworth's as a medium bomber, it went into production in 1940. It is largely of wooden construction and was the first large British aircraft to be fitted with a tricycle under-carriage. For transport duty a large freight door is fitted into the side of the fuselage just aft of the trailing edge of the wing.

SPAN: 77 ft. 0 in.
LENGTH: 59 ft. 10 in
MAX: SPEED: 265 m.p.h.
SERVICE CEILING:

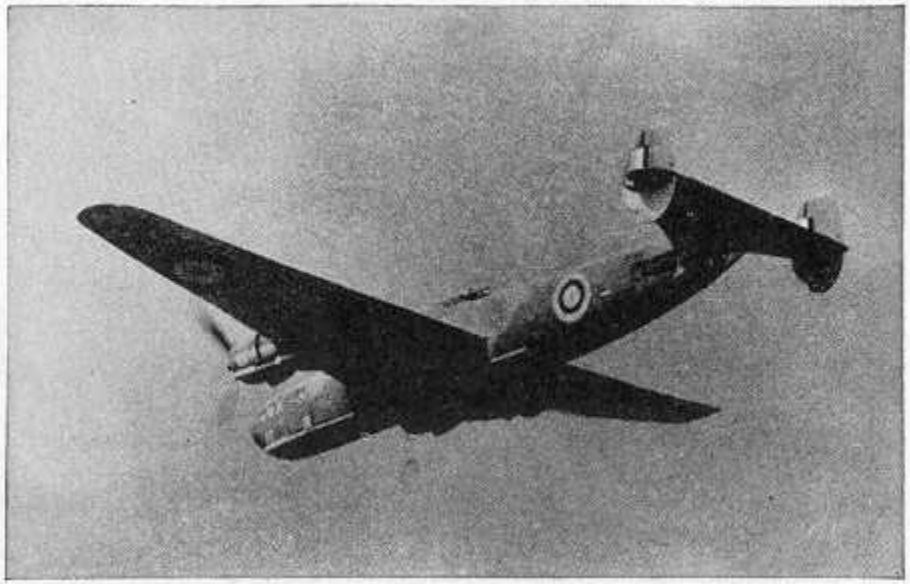
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

RESTRICTED

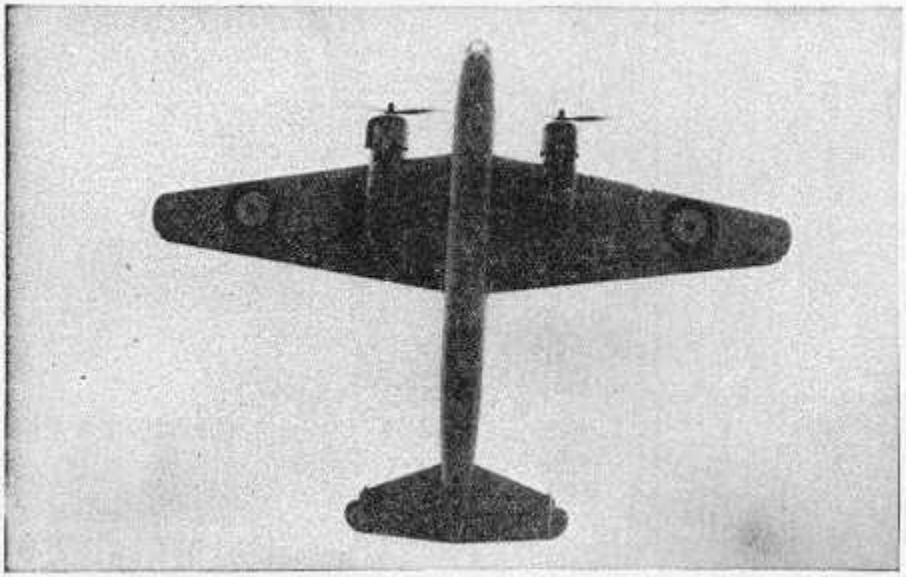
A



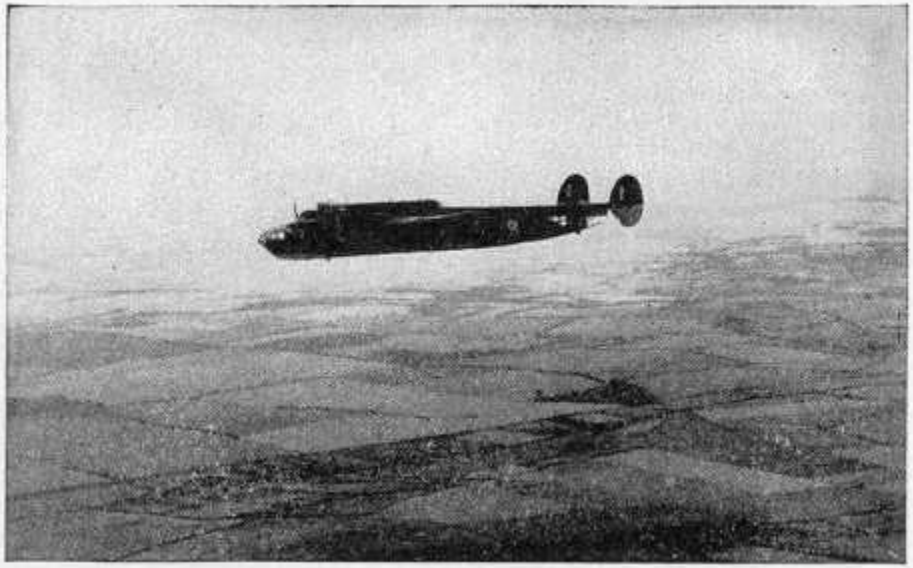
C



B



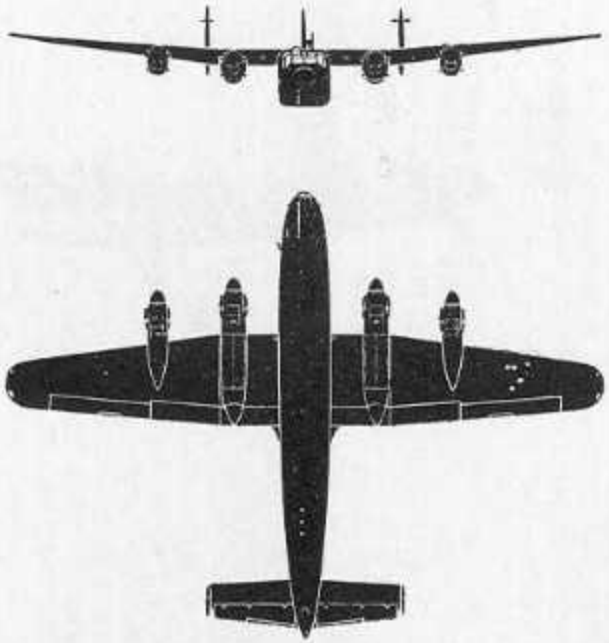
D



TRANSPORT

U. K.

YORK



R. A. F.
COMMERCIAL
A. V. ROE
ENGLAND

DISTINGUISHING FEATURES: A large, 4-engine monoplane transport. Dihedral and taper starts from inboard motors, the wing and motor assemblies being identical with the Lancaster, from which the York was developed. The high-wing arrangement is typical of British transport aircraft. The guitar-pick-shaped outer fins and rudders are identical with those on the Lancaster, but a third central fin has been added.

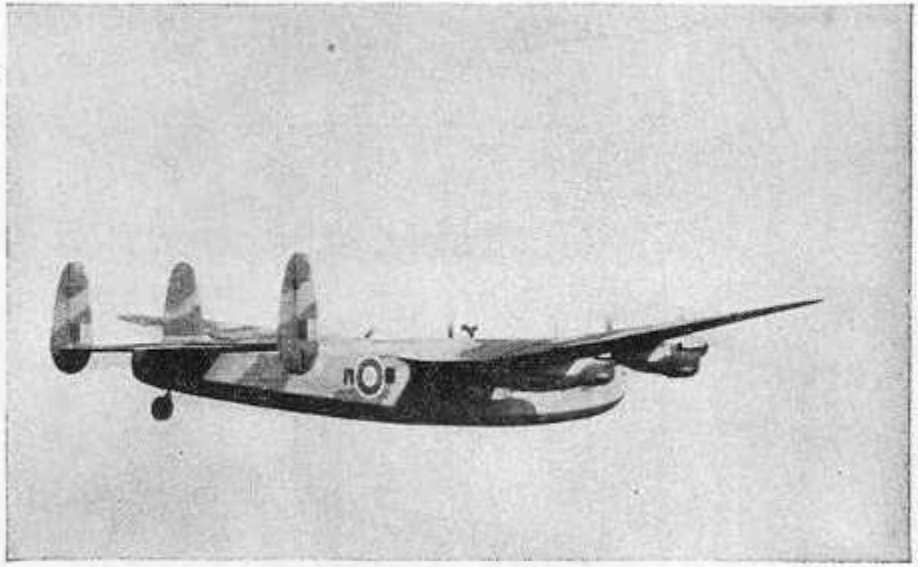
INTEREST: The Avro York is a valuable transport aircraft in time of war and should prove a successful airliner in peace. The York can carry four jeeps or a complete dismantled Spitfire. The high wing arrangement gives passengers a much better view than from a low wing such as the C-54, and has the advantage of allowing the fuselage to sit low on the ground for convenient loading while still allowing full clearance for propellers. Maximum passenger capacity (over 1000 miles) is 56; operational cruising speed about 200 m.p.h.

SPAN: 102 ft. 0 in.
LENGTH: 78 ft. 11 in.
MAX. SPEED: 285 m.p.h.
SERVICE CEILING:

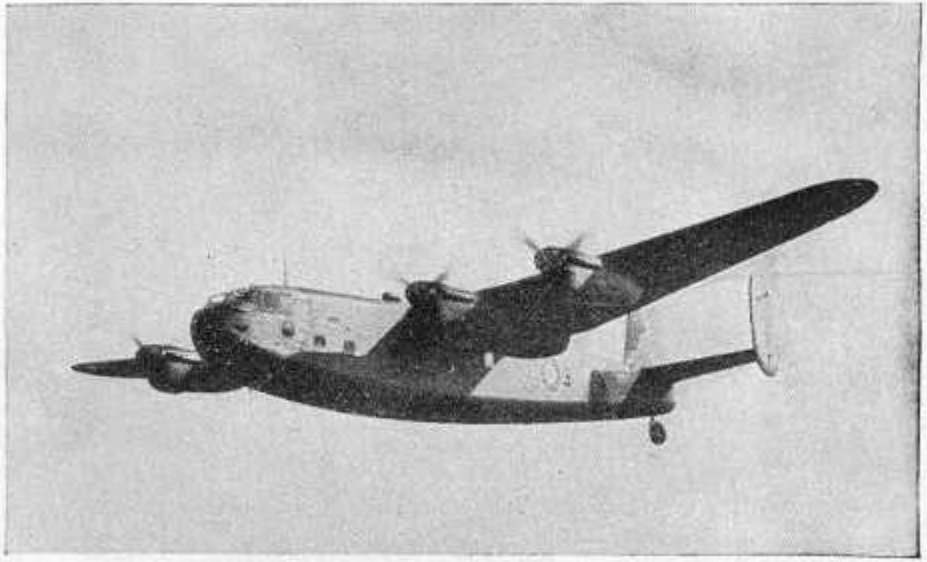
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

RESTRICTED

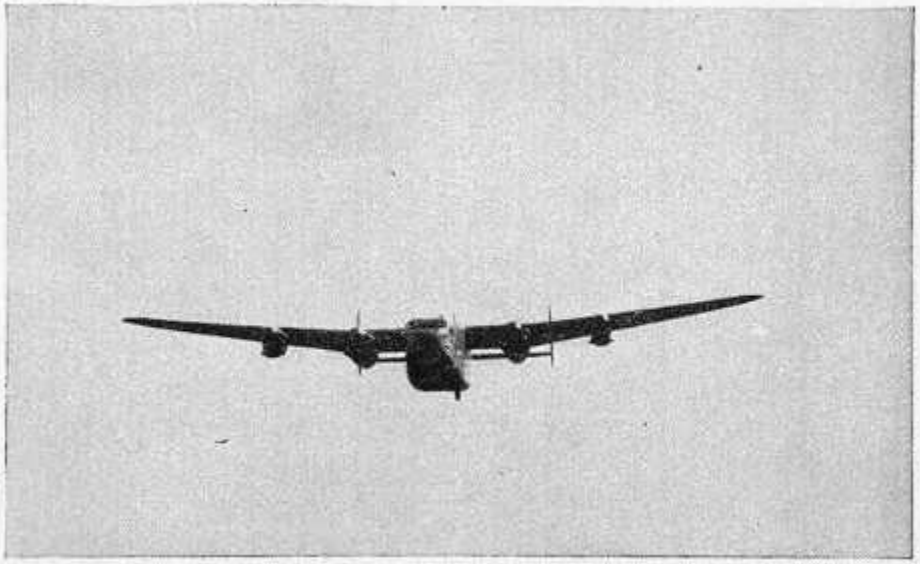
A



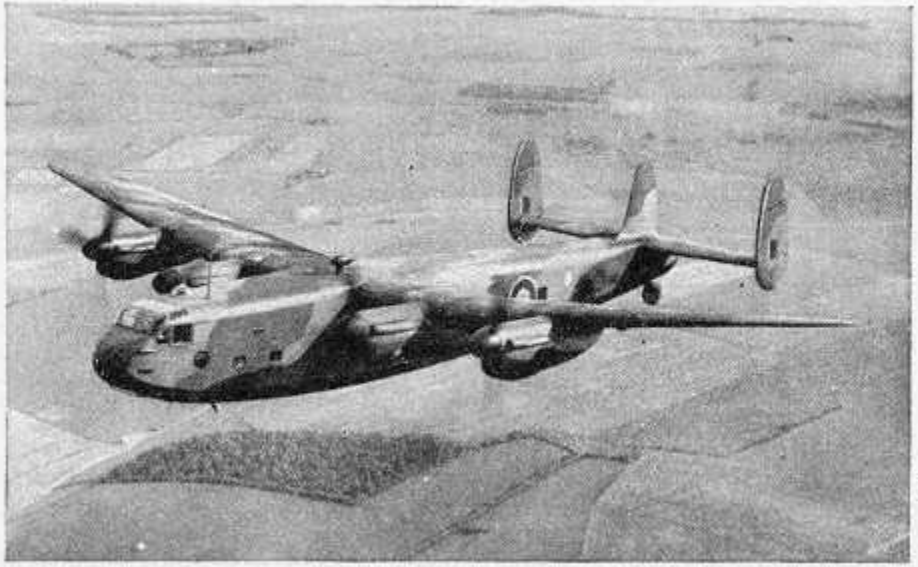
C



B



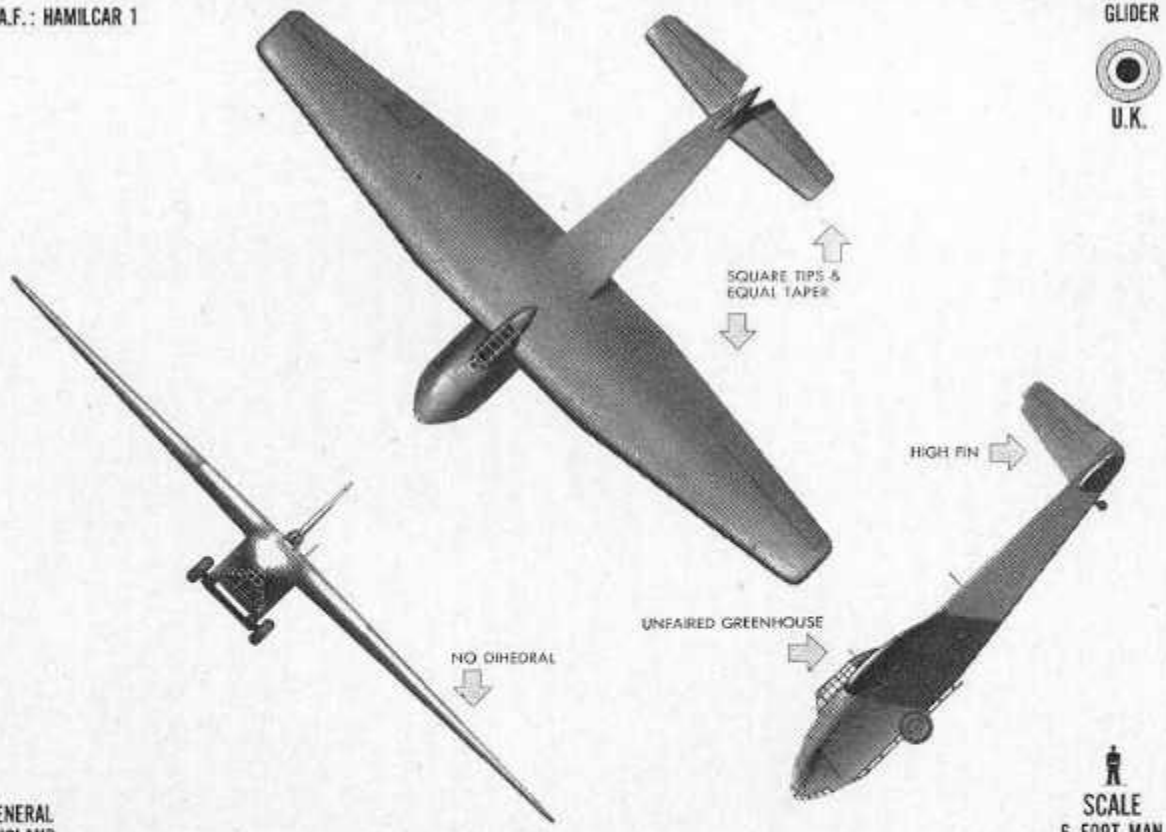
D



GLIDER

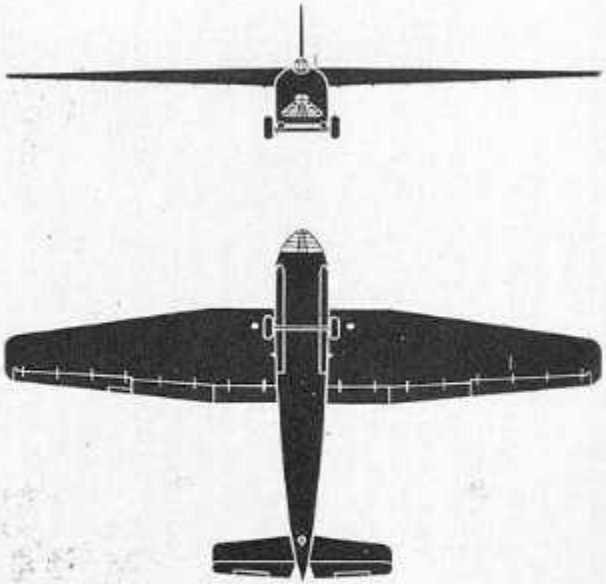
U.K.

HAMILCAR



GENERAL ENGLAND

SCALE 6-FOOT MAN



DISTINGUISHING FEATURES: High-wing monoplane, no dihedral. Wings have straight center section, then equal taper to square-cut tips. Large rounded nose. Box-like fuselage tapering aft of the wings. Prominent unfaired cockpit. Square-cut, tapered tailplane with V cut-out. Very tall, tapered, square-cut single fin and rudder.

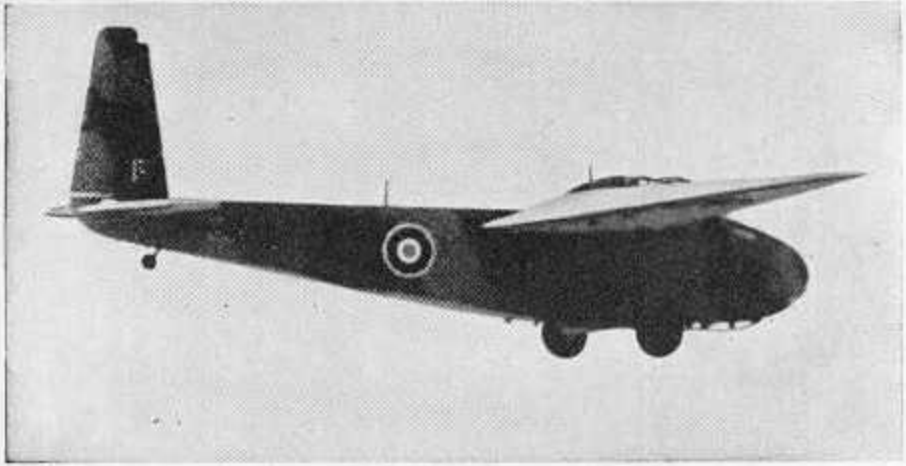
INTEREST: The Hamilcar is the largest of the British troop and cargo carrying gliders. As in nearly all of the troop gliders, the landing gear is jettisonable. It is nearly always towed by a Halifax, but can be towed by the Stirling or Lancaster.

SPAN: 110 ft.
LENGTH: 68 ft.
NORMAL TOWING SPEED:

SERVICE CEILING:

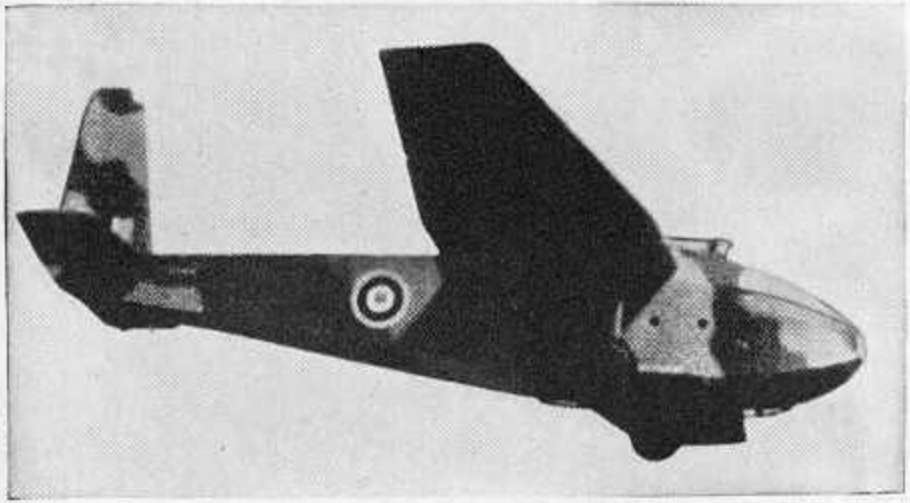
RESTRICTED

A

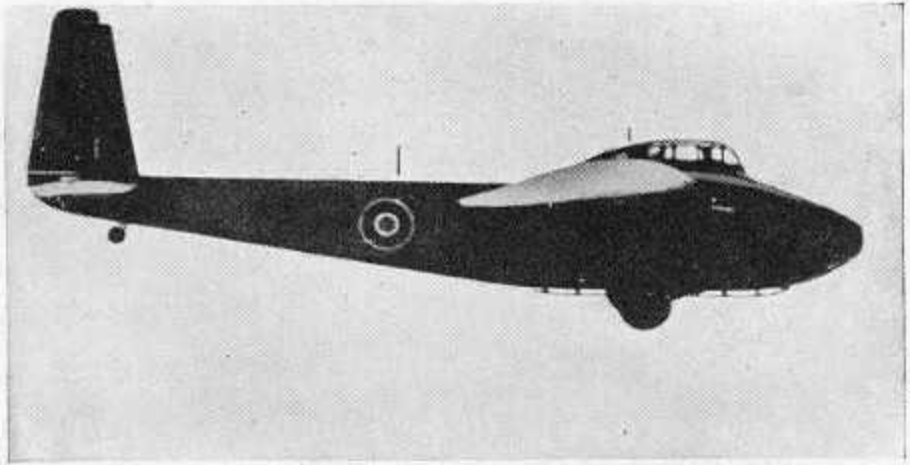


C

B



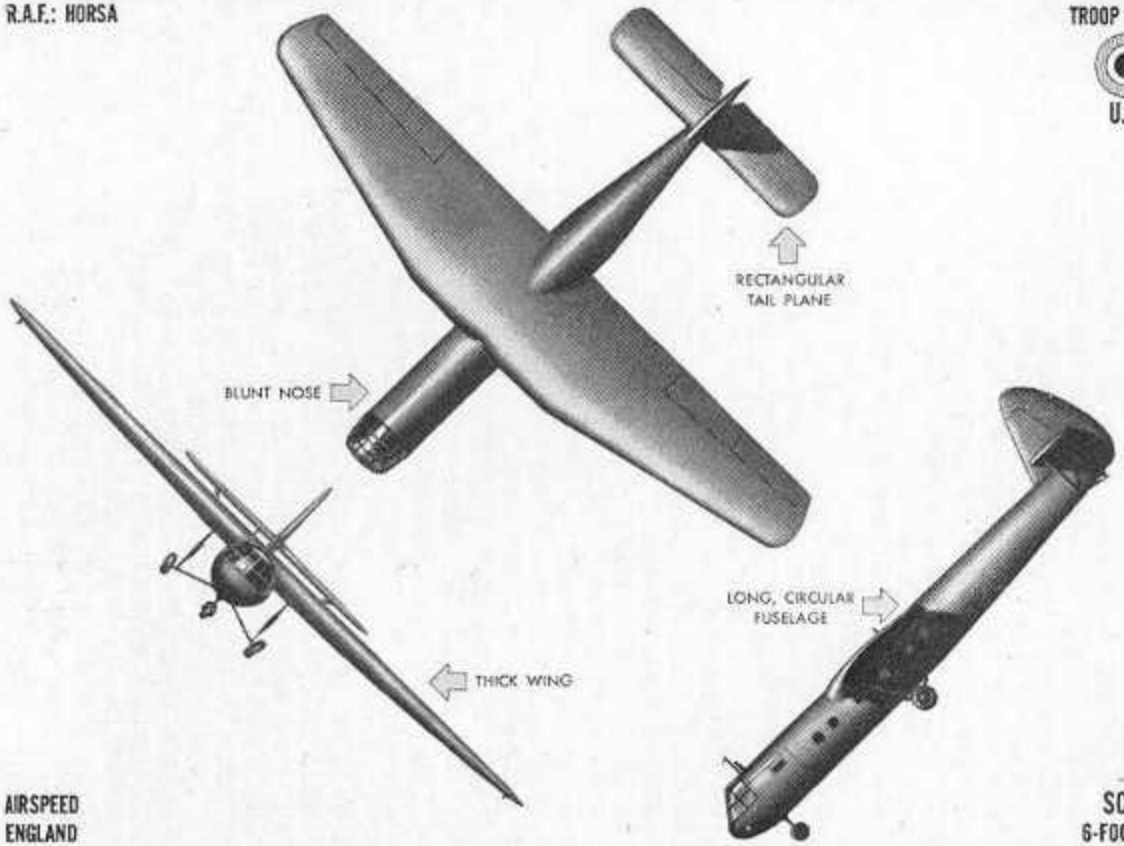
D



TROOP GLIDER

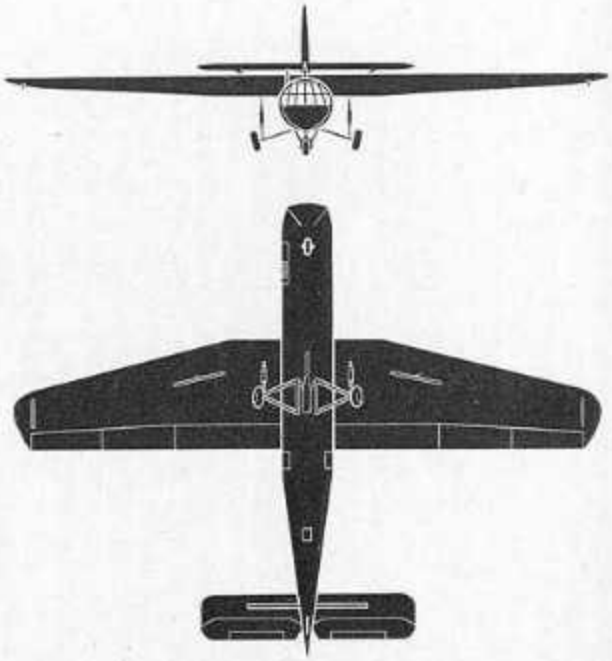
U.K.

HORSA



AIRSPEED
ENGLAND

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: High-wing monoplane. Cylindrical fuselage with very long, partially glazed nose. Wing tapers on leading edge outboard of rectangular center section. Blunt wing tips. No dihedral. Straight fuselage from nose to trailing edge of wing, tapered from there to tail. Rectangular horizontal tailplane mounted above fuselage. High, pointed single fin and rudder with curved trailing edge. Fixed tricycle landing gear; main gear may be jettisoned.

INTEREST: The Horsa is one of Britain's standard troop-carrying gliders. Built mainly of wood, it is notable for being the first craft of its kind to be fitted with a tricycle landing gear. The wheels can be jettisoned after take-off and the glider landed on its skids. This would be done in an actual airborne attack to shorten the landing. Ungainly in appearance, the Horsa pairs well with its tug, the Whitley.

SPAN: 88 ft.

LENGTH: 67 ft.

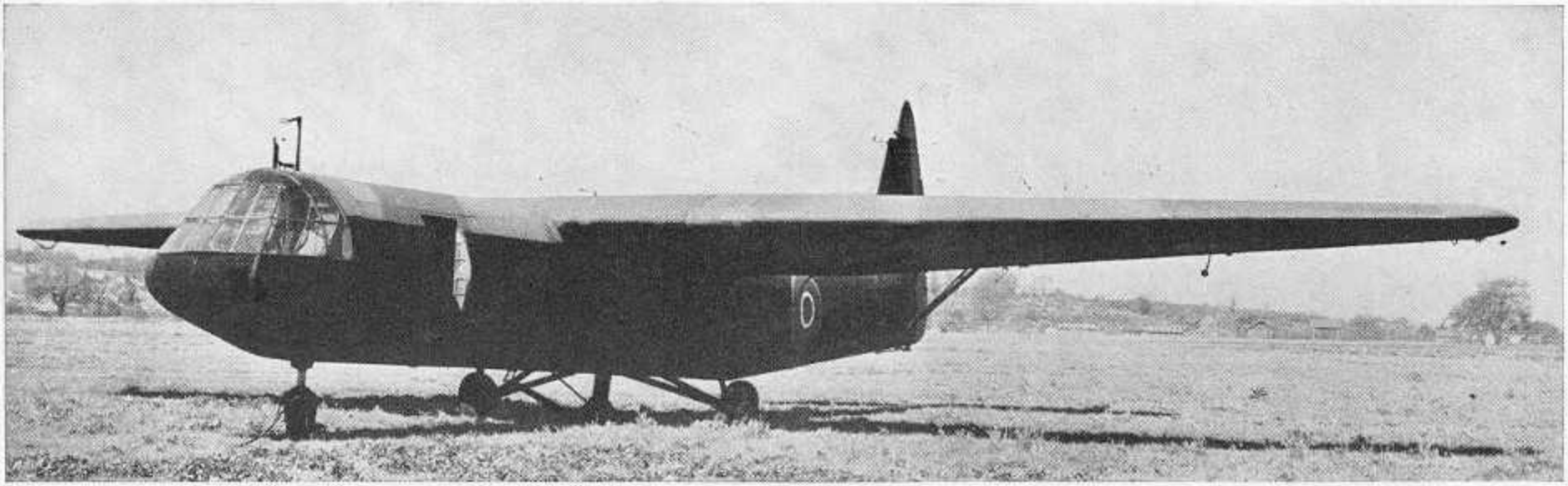
NORMAL TOWING SPEED:

SERVICE CEILING:

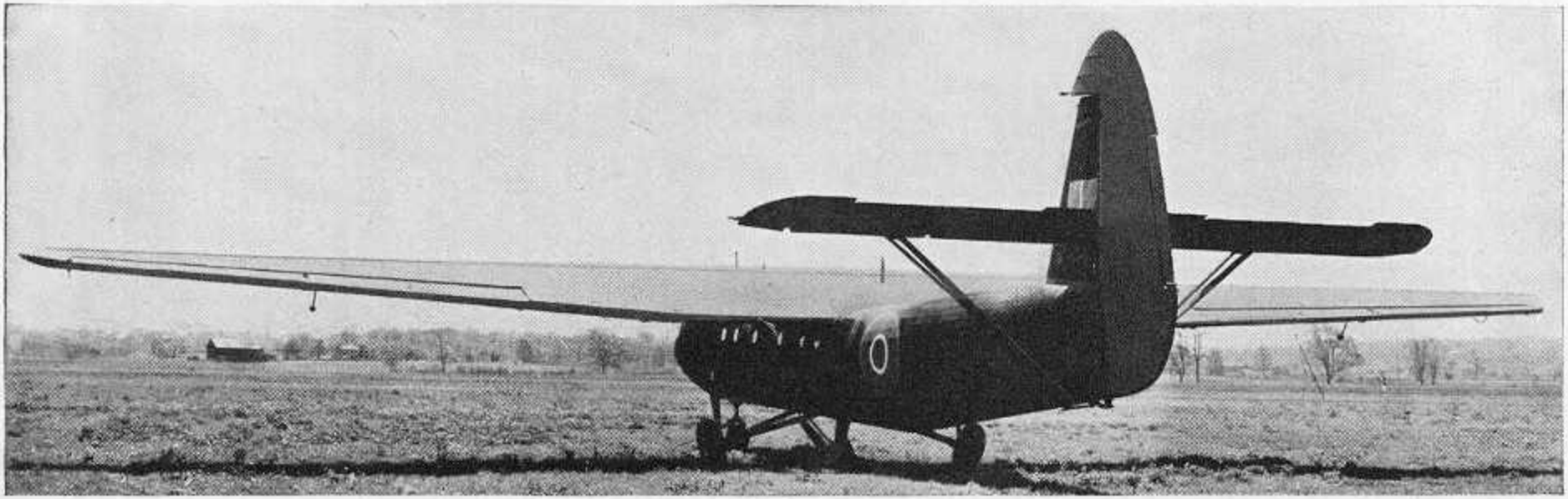
RESTRICTED

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

A



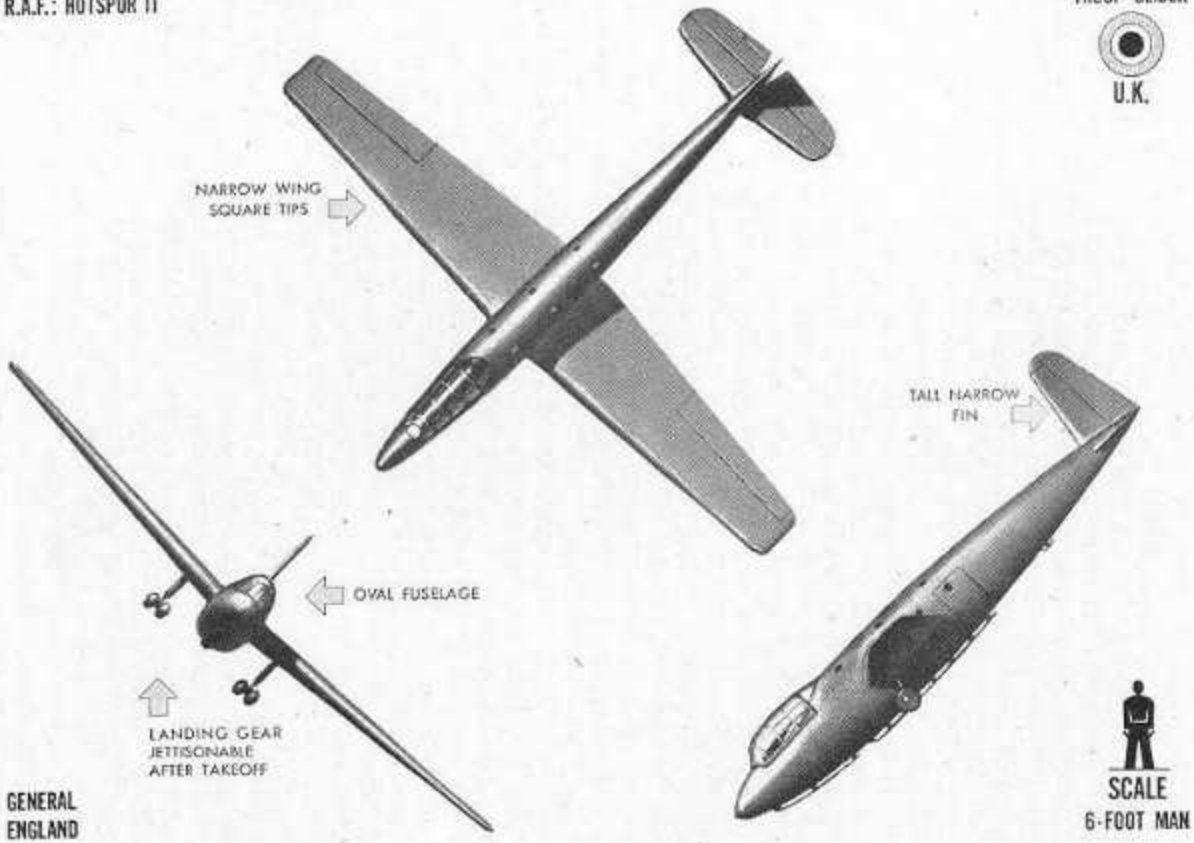
B



TROOP GLIDER

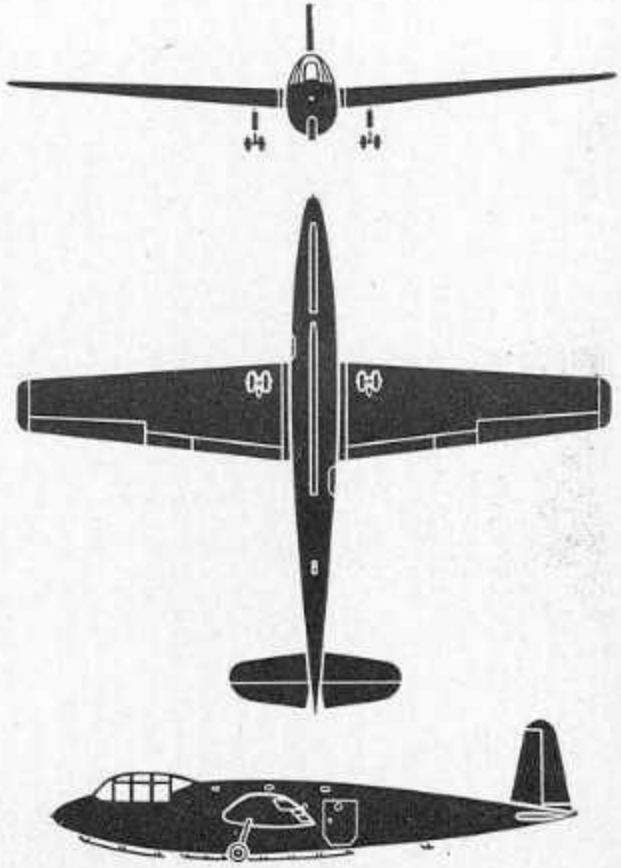
U.K.

HOTSPUR II



SCALE
6-FOOT MAN

GENERAL
ENGLAND



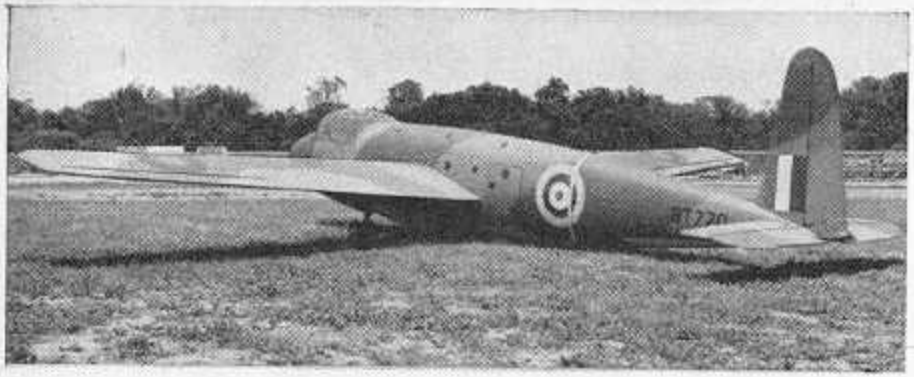
DISTINGUISHING FEATURES: Mid-wing monoplane with slight, equal taper and squarish tips. Long, pointed nose with raised cockpit enclosure. Oval-shaped fuselage, very thin near tailplane. High, narrow fin and rudder, equally tapered. Slightly tapered tailplane with round tips.

INTEREST: The Hotspur is the standard trainer in the British Glider Pilot regiment. It is an eight-seat troop carrier and has a twin-wheel landing gear which can be jettisoned after take-off. The raised cockpit canopy gives the pilot a good view to the sides and forward.

SPAN: 45 ft. 11 in. **SERVICE CEILING:**
LENGTH: 39 ft. 4 in.
NORMAL TOWING SPEED: 150 m. p. h.

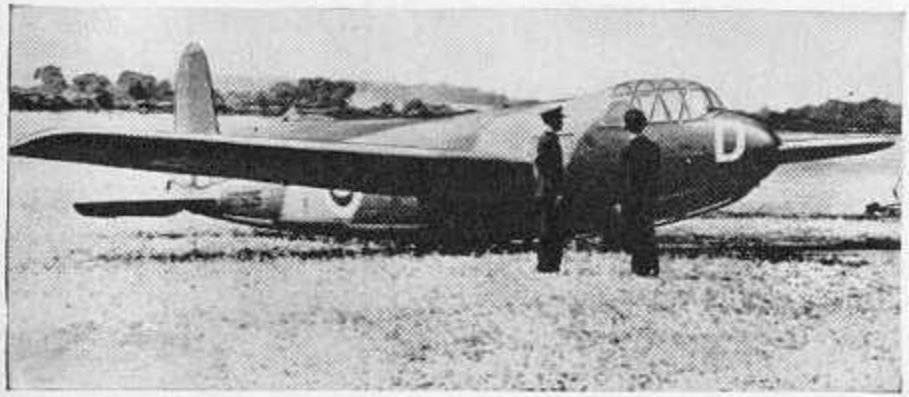
RESTRICTED

A

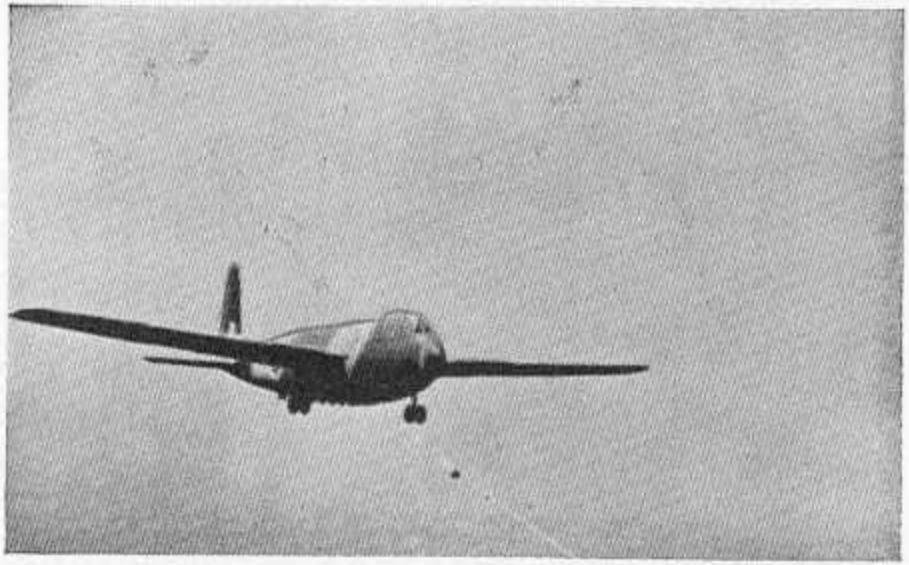


B

C

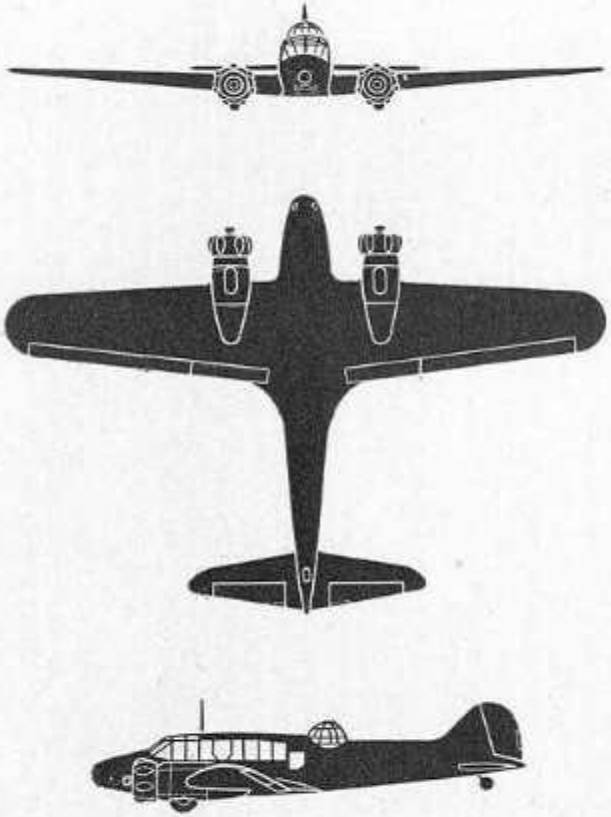


D



E

ANSON

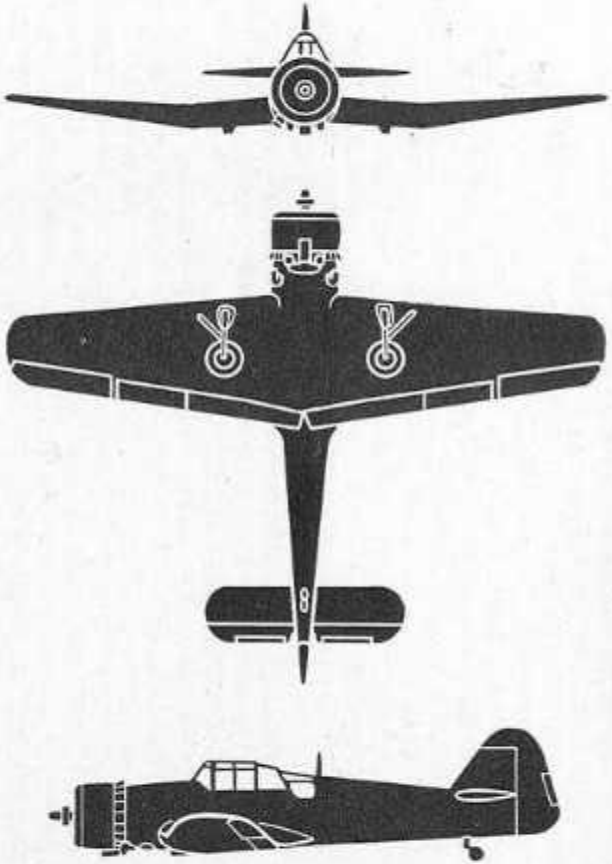


SPAN: 56 ft. 6 in.
LENGTH: 42 ft. 3 in.
MAX. SPEED: 188 m. p. h.
SERVICE CEILING: 19,000 ft.

DISTINGUISHING FEATURES: Single radial engine, low-wing monoplane. Thick, inverted gull wing with equal taper and squarish clipped tips. Prominent cockpit canopy faired into fuselage. Bell-shaped fin and rudder. Tailplane has straight edges with round tips.

INTEREST: The Master was first developed in 1936. It was adopted officially as the British Advanced Trainer when the air expansion program began. It has the typical Miles construction consisting of wood with plywood skin and thick wing section. The Master I was powered with a Rolls Royce Kestrel–XXX liquid-cooled engine. The Master II had a Bristol Mercury 20 radial engine. The present Master III is powered with a Pratt & Whitney Wasp radial engine. The Master is the only British aircraft in which the landing gear retracts backward and turns to lie flat in the wings. It is extremely maneuverable.

MASTER III

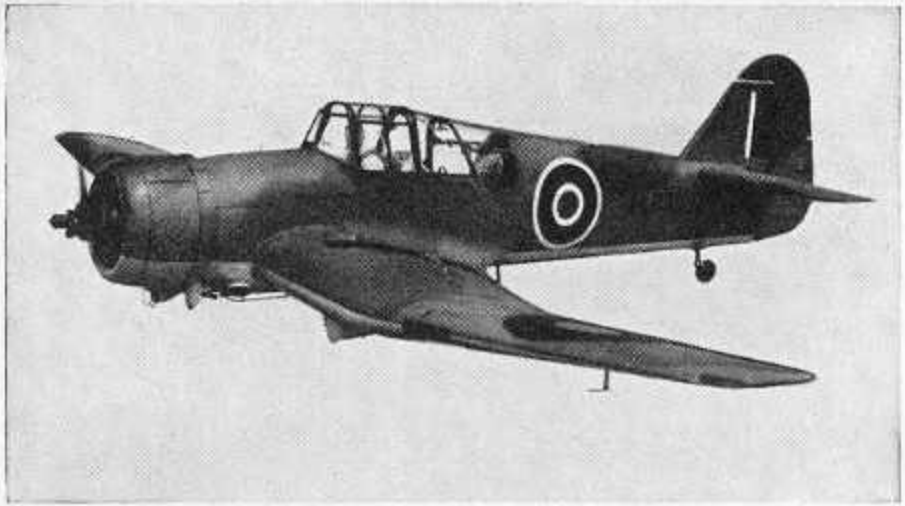


SPAN: 39 ft.
LENGTH: 29 ft. 6 in.
MAX. SPEED:
SERVICE CEILING:

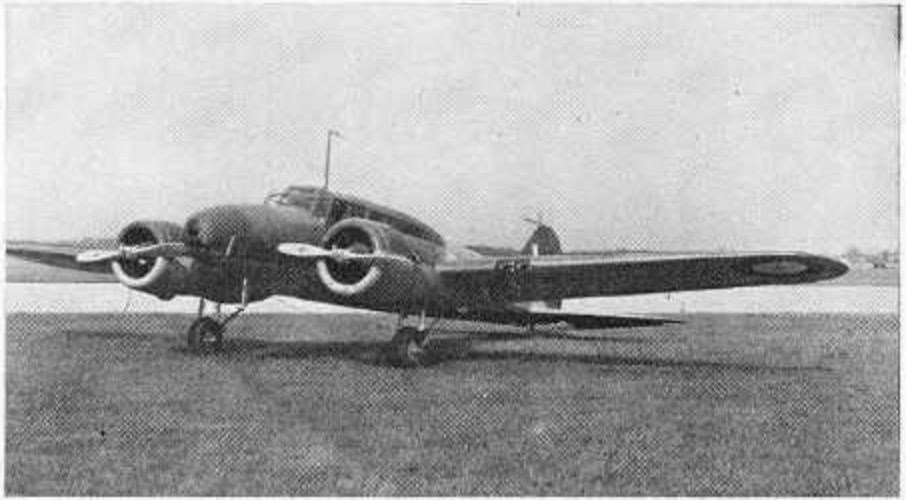
DISTINGUISHING FEATURES: Twin radial engine, low-wing monoplane. Wings have equal taper with round tips, and large fillet at roots. Long glazed cabin enclosure. Tapered tailplane with sharp tips. Low, rounded single fin and rudder.

INTEREST: This aircraft is now being built in Canada by Federal Aircraft Limited, and is used as an advanced trainer. Its duties consist of twin-engine training, navigational, gunnery, and bombing training. It is also used for light communications work and pilot taxi duties. During the early part of the war it carried on some operational work and scored a number of victories over faster and more heavily armed enemy aircraft.

A

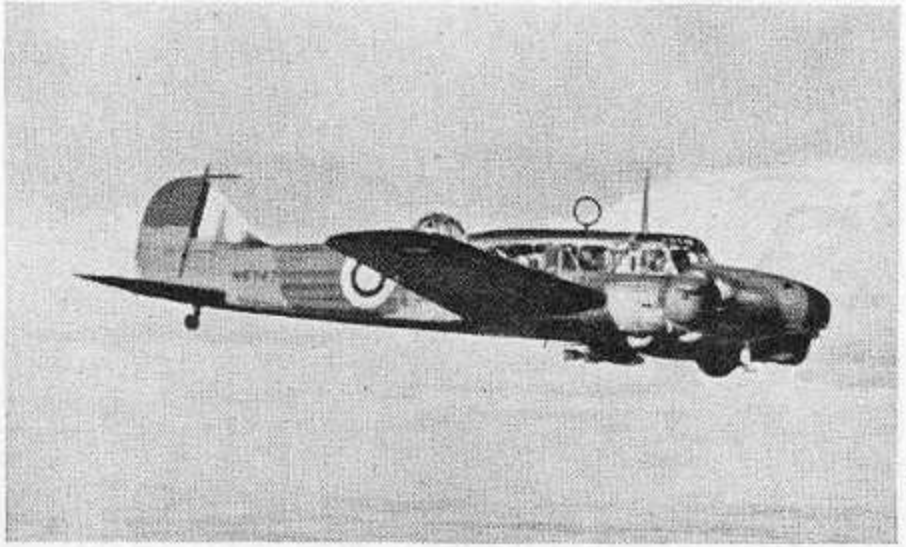


C



B

D



GERMAN AIRCRAFT

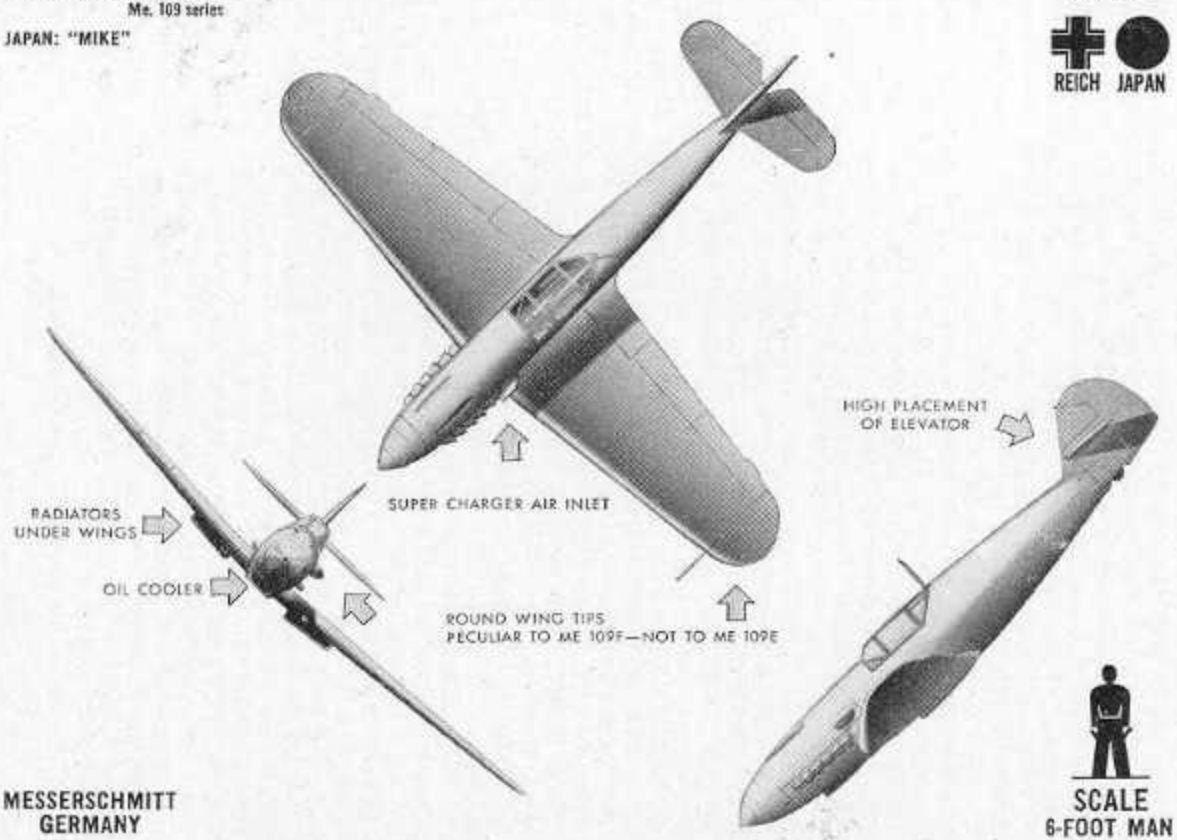
REICH

GERMANY: Me. 109F
Me. 109 series

JAPAN: "MIKE"

FIGHTER

REICH JAPAN



SCALE
6-FOOT MAN

MESSERSCHMITT
GERMANY

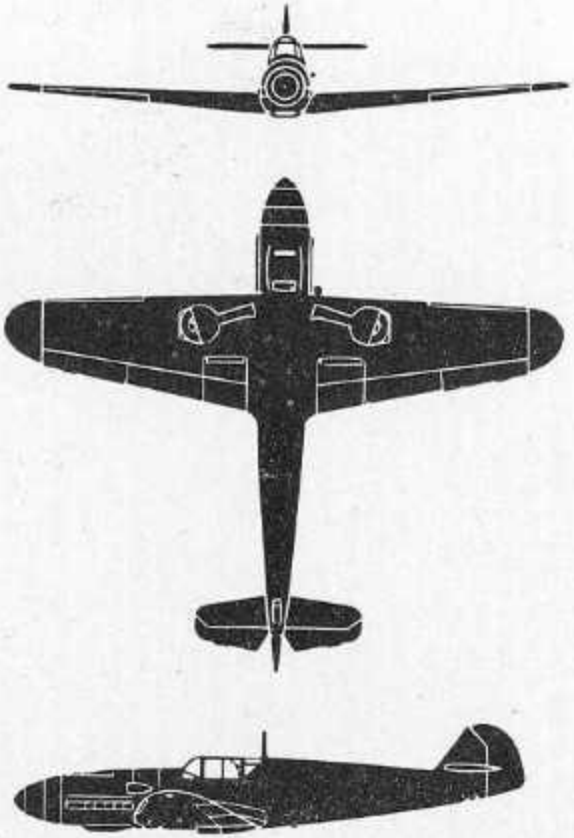
DISTINGUISHING FEATURES: Low - wing monoplane with single in-line engine and thick nose. Air scoops under each wing and under nose. Wings tapered with rounded tips and dihedral from roots. Stabilizer set high on small fin and rudder. Long fuselage with low cock-pit.

INTEREST: The Messerschmitts swarmed over England during the Battle of Britain and they have been in the thick of action on every front where the Luftwaffe has operated. This fighter has maneuverability, climbing ability, and its ceiling is higher than some of the Allied fighters sent against it. This aircraft also is used at times as a light bomber in support of ground troops and, in the Southwest Pacific where this aircraft is used by the Japs, it is known as "Mike." A high altitude version, the Me. 109G is now coming into use. It is very similar in appearance to the Me. 109F. An earlier model, the Me. 109E, has square wing tips with a span of 32 ft. 6 in. and stabilizer struts. The 109E is now obsolescent and is going out of service.

APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

MESSERSCHMITT "ME. 109"



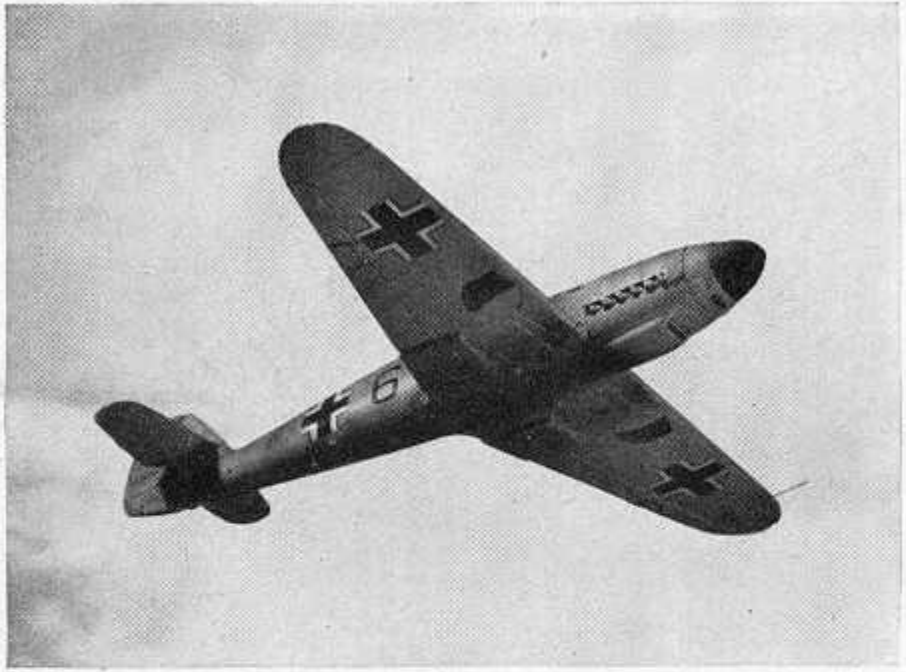
SPAN: 32 ft. 9 in.
LENGTH: 29 ft. 10 in.

SERVICE CEILING:
38,000 ft.
(with normal load, 37,000 ft.)

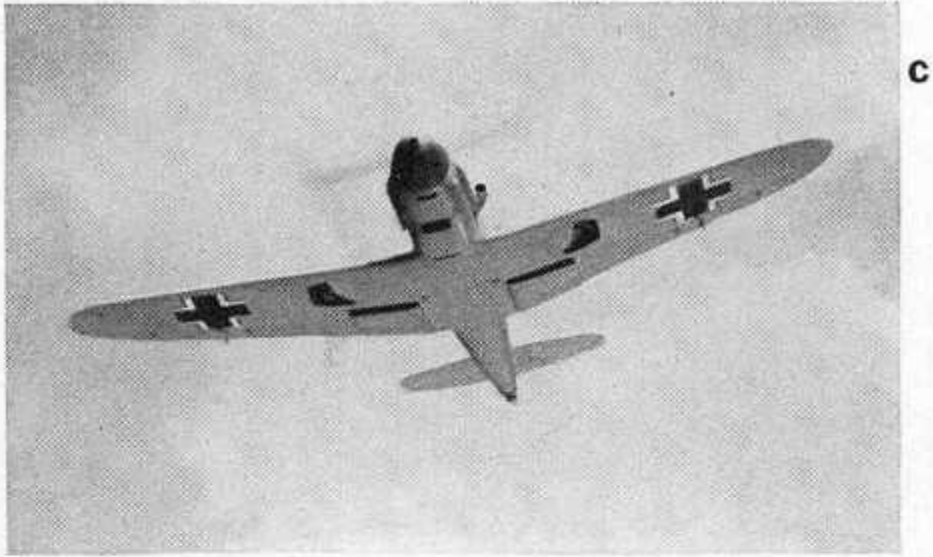
MAX. SPEED: 370 m. p. h. at 22,000 ft.

RESTRICTED

A

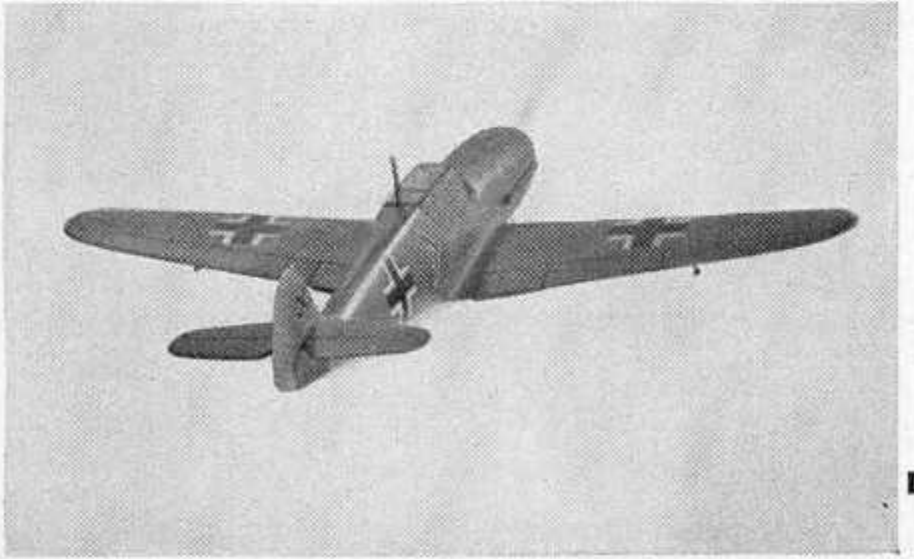


C



B

D



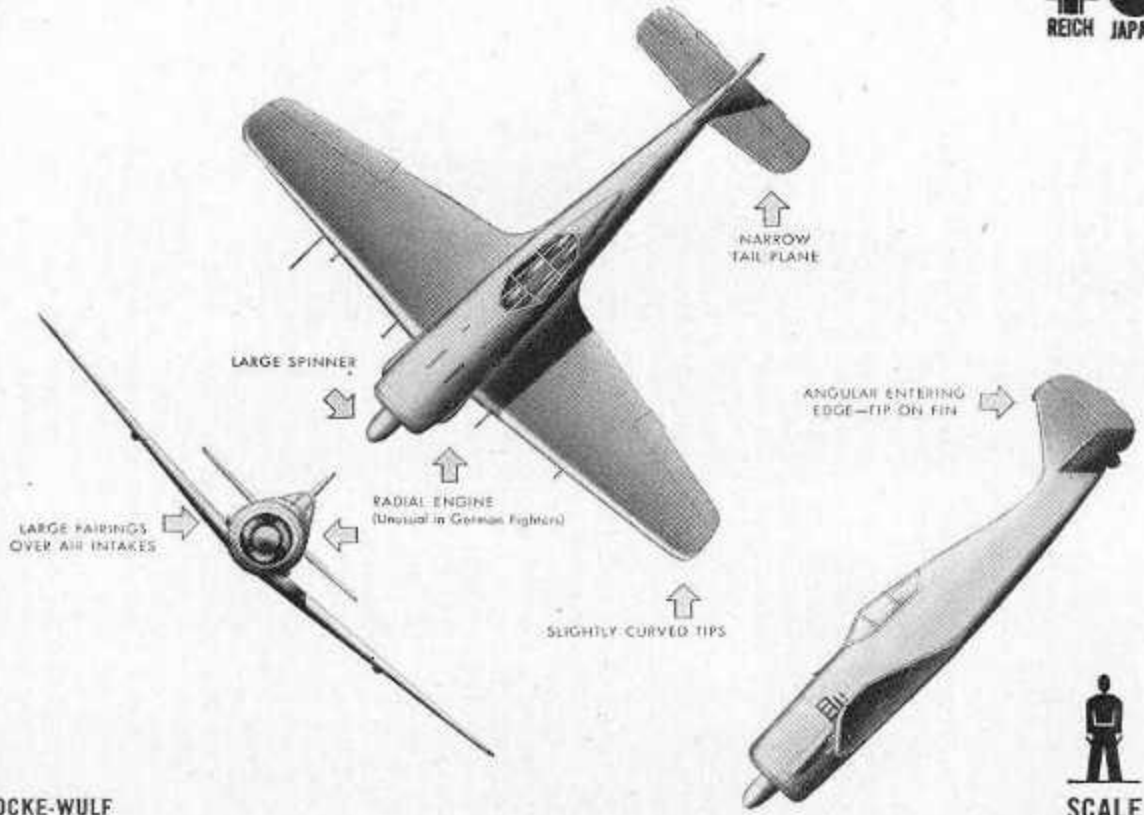
GERMANY: F. W. 190A-3
F. W. 190 series

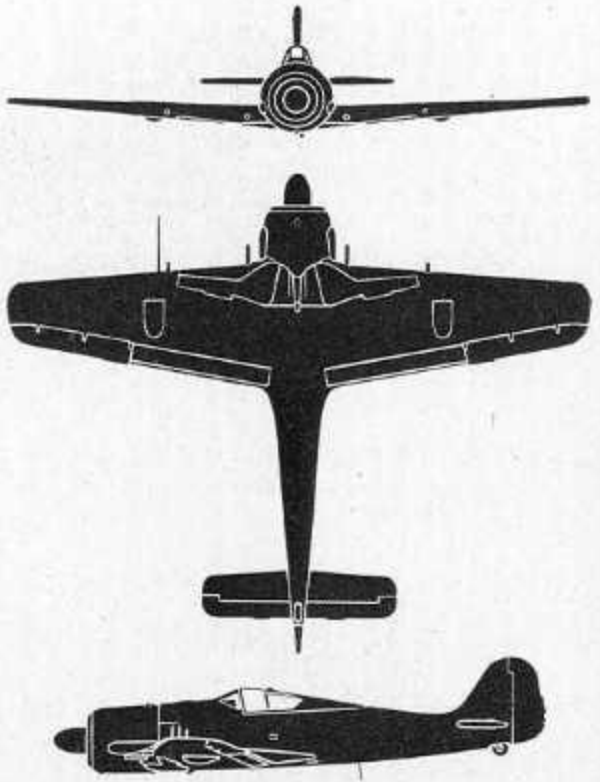
JAPAN: "FRED"

FIGHTER

REICH JAPAN

FOCKE-WULF "F. W. 190"





SCALE
6-FOOT MAN

FOCKE-WULF
GERMANY

DISTINGUISHING FEATURES: Short blunt nose with large spinner. Short thin tapered wings with blunt tips. Fuselage narrow aft of wings. Rectangular stabilizer and tail plane. Tall fin and rudder. Small low cockpit tapering into fuselage.

INTEREST: This is the only single-engine German fighter with a radial engine. The use of an air-cooled engine represents a radical change in German fighter philosophy. The "190" looks more like an American plane than any previous German design. First used over Europe in the summer of 1941, the "190" is now also said to be in use by the Japanese Air Force in the Southwest Pacific where it is known as "Fred."

SPAN: 34 feet 6 in.
LENGTH: 29 ft. 1 in.

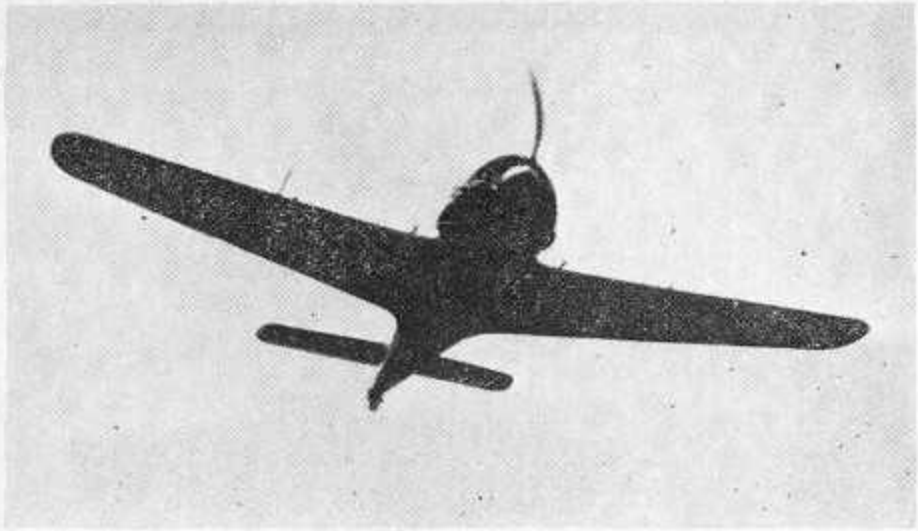
SERVICE CEILING:
37,000 ft. (not loaded)
36,000 ft. (normal load)

MAX. SPEED: 395 m. p. h. at 17,000 ft.

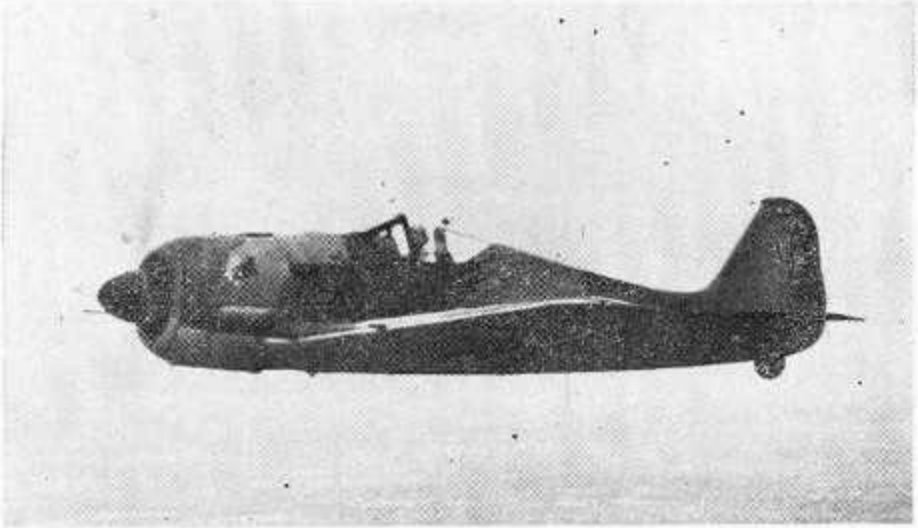
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

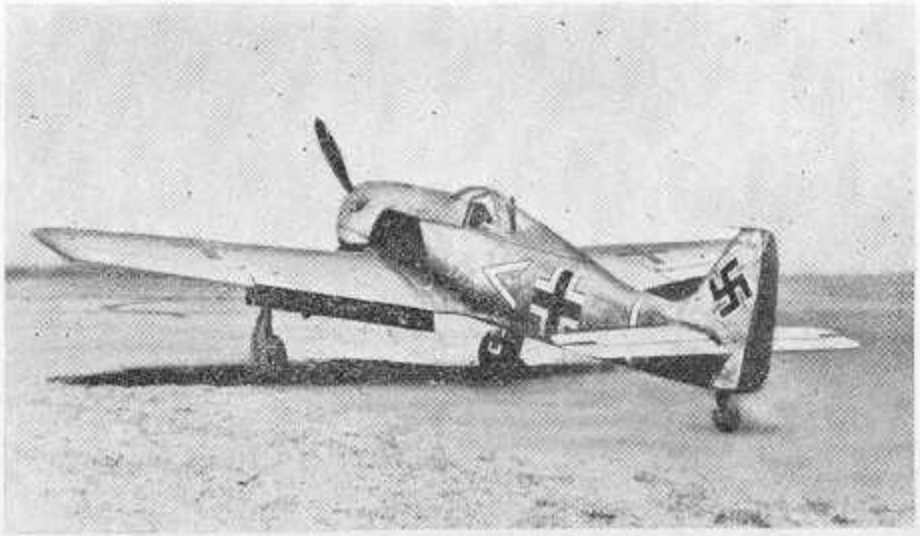


A



C

B

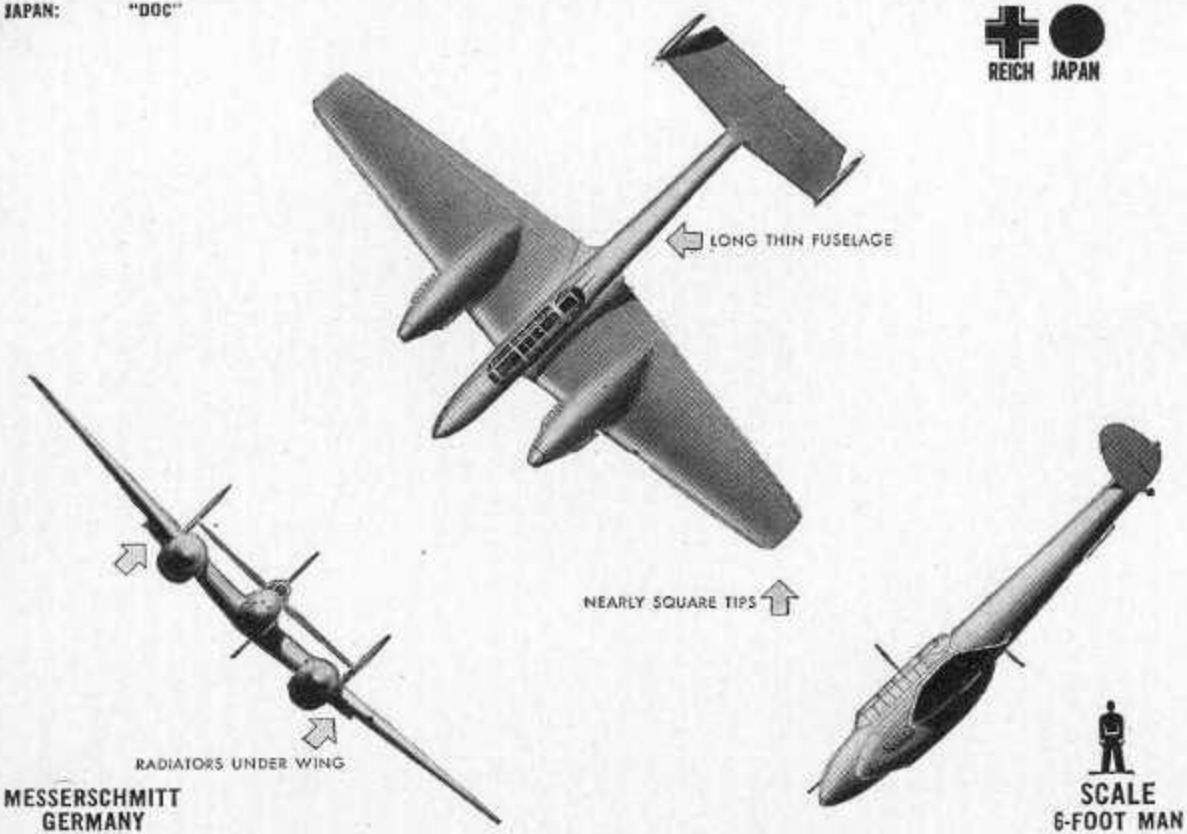


D

GERMANY: Me. 110
JAPAN: "DOC"

FIGHTER—LIGHT BOMBER

REICH JAPAN



MESSERSCHMITT
GERMANY

SCALE
6-FOOT MAN

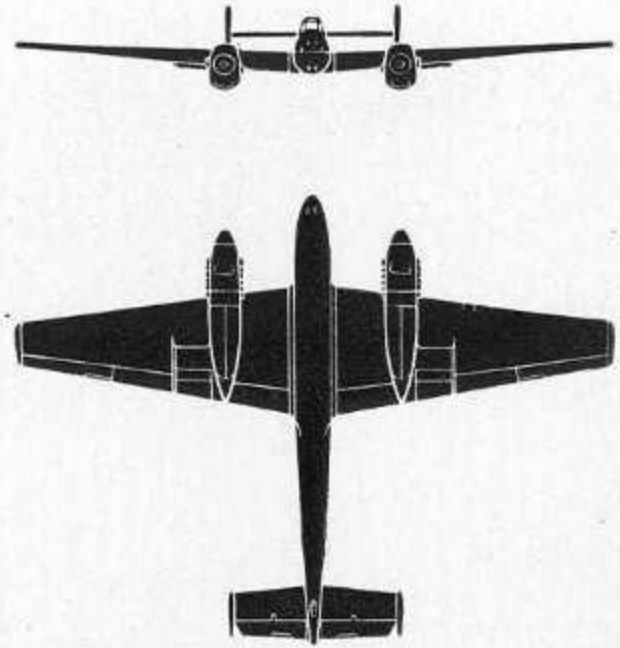
DISTINGUISHING FEATURES: Twin-engine, low-wing monoplane. Tapered wings have full dihedral and square tips. Twin in-line engines are underslung. Fuselage is slim with long cockpit enclosure. Twin fins and rudders, oval in shape with flattened bottoms, are set outboard of stabilizer and elevator.

INTEREST: The Me 110 first flew in 1938. Although it is a fast aircraft, its inferior maneuverability make it somewhat more vulnerable than the Me 109, and it is now infrequently used as a fighter on the European front. It has been used extensively, however, as a day and night fighter on the Russian front and in Libya. The Me 110 is also being used for bombing and for ground attacks. Certain reconnaissance squadrons are now equipped with them. Some long-range fighter versions are equipped with a special blister tank under the fuselage in addition to two jettisonable wing tanks.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 1

MESSERSCHMITT "ME. 110"



SPAN: 53 ft. 11 in.
LENGTH: 40 ft. 4 in.

SERVICE CEILING:
34,000 ft. (not loaded)
32,000 ft. (normal load)

APPROX. SPEED: 350 m. p. h. at 22,000 ft.

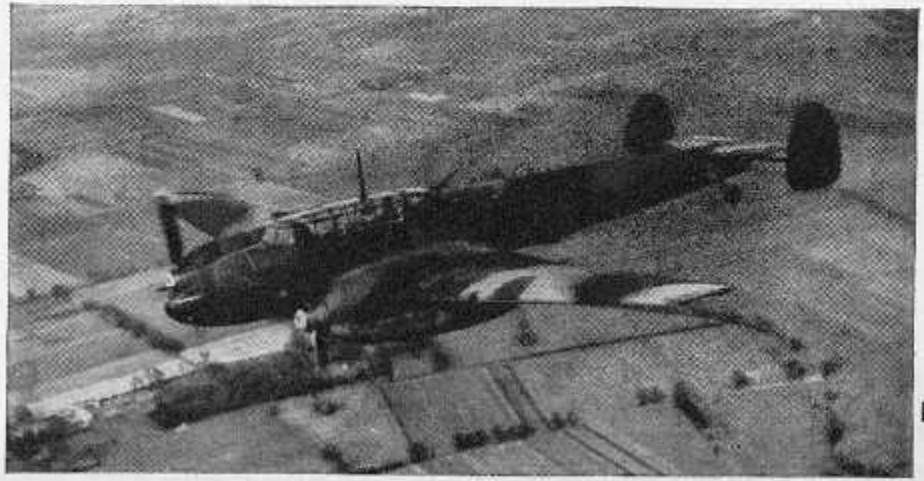
RESTRICTED

A

C

B

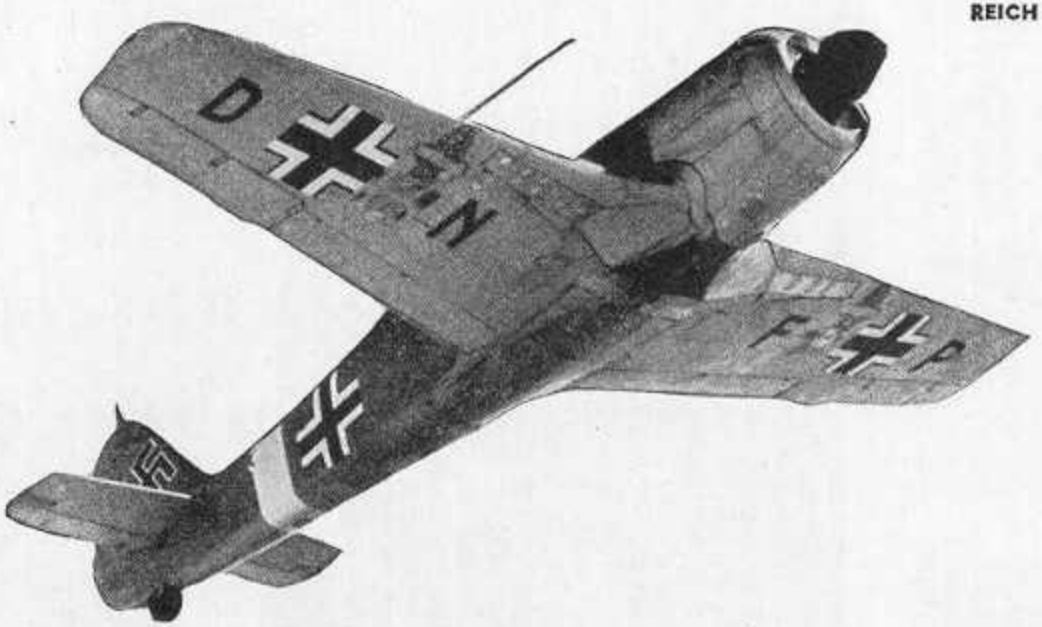
D



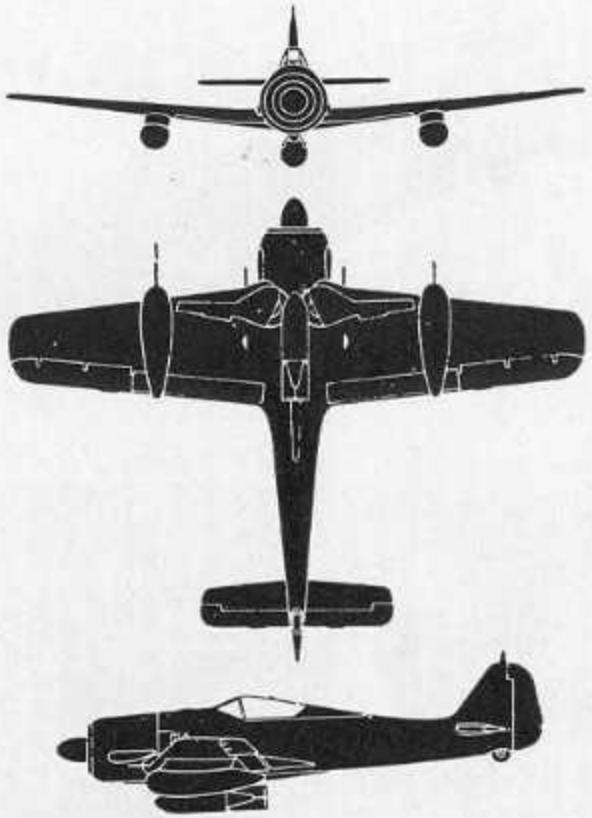
FIGHTER-BOMBER

REICH

FOCKE WULF "F.W. 190"



FW 190A
FOCKE WULF
GERMANY



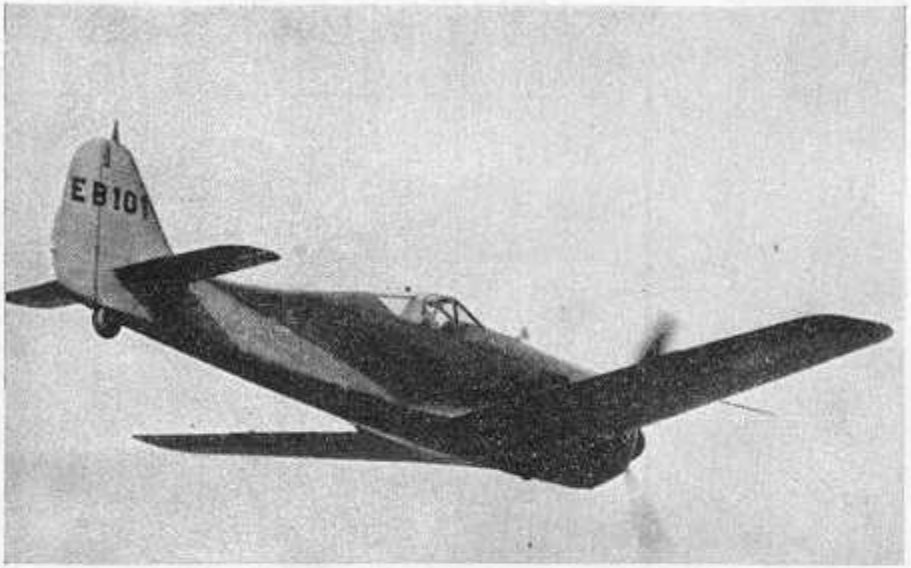
DISTINGUISHING FEATURES: Single-engine, low-wing monoplane. Equi-tapered wing with blunt tips and full dihedral. Short, blunt nose. Low, well faired cockpit canopy fairs into tapered upper surface of fuselage. Fuselage has straight underside. Small, nearly rectangular stabilizer. Single fin and rudder.

INTEREST: First reported in action in September 1941, the FW 190 was a notable departure from previous German single-engine fighter practice in that it was the first to have a radial engine. One of the most formidable weapons of the Luftwaffe, it is being used both as a fighter and bomber. It is well armed and armored and has very good all around performance. FW 190's are being encountered in numbers by the Allies on all European fronts.

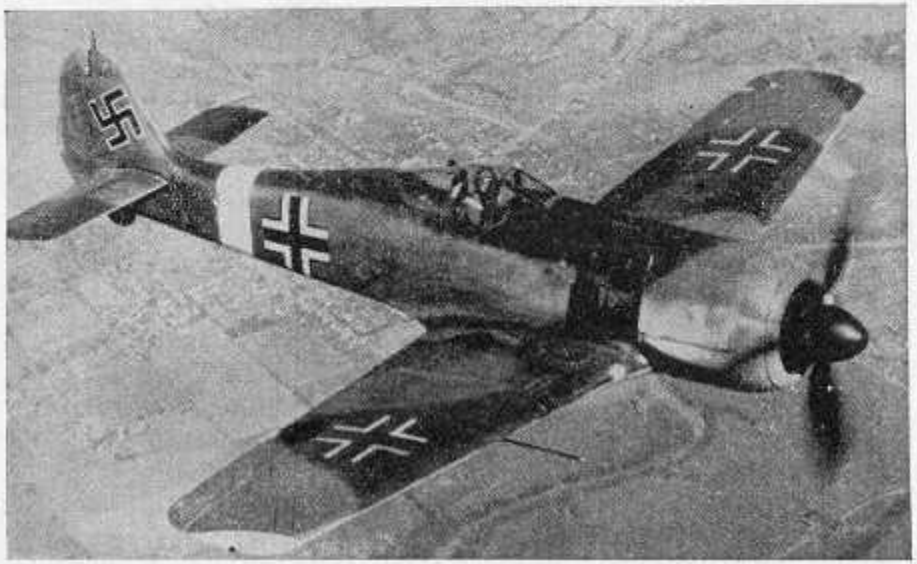
SPAN: 34 ft. 6 in.
LENGTH: 29 ft. 1 in.
MAX. SPEED: 385 m.p.h. at 19,000 ft.
SERVICE CEILING: 38,000 ft.

RESTRICTED

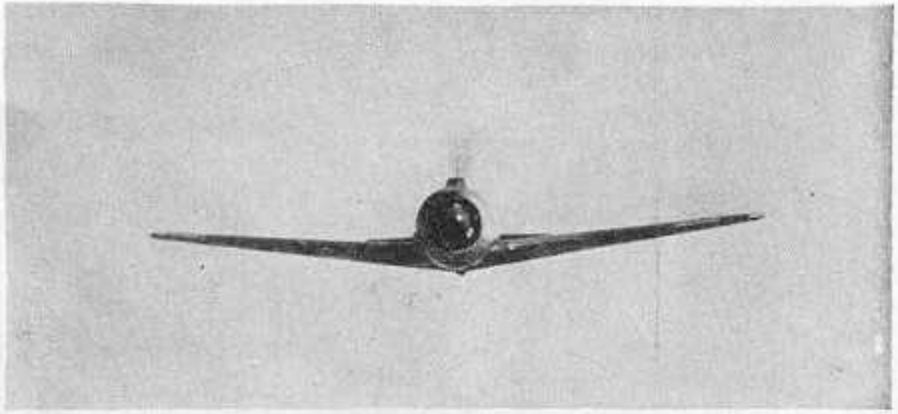
A



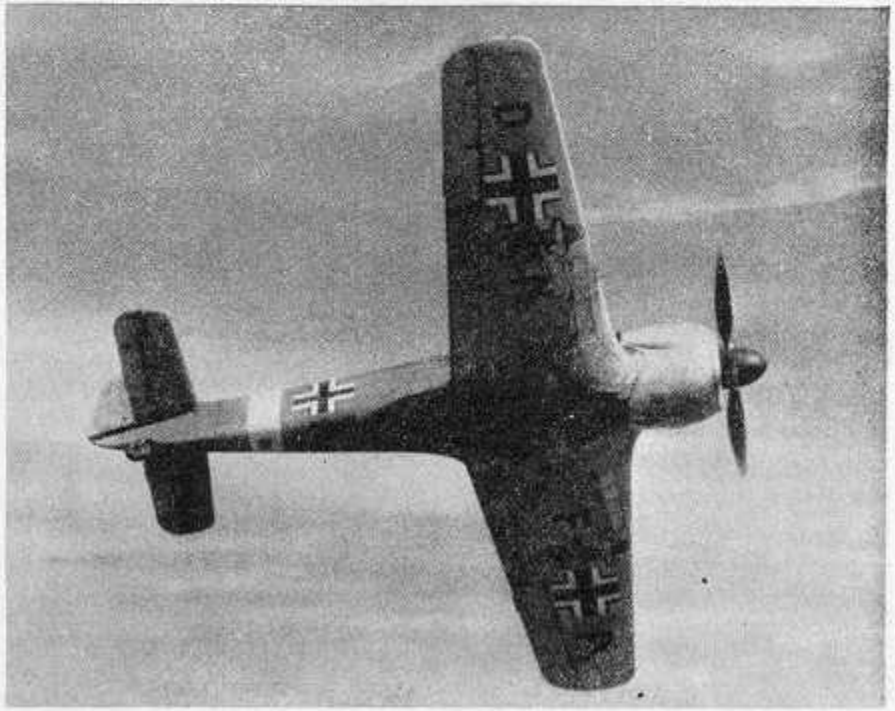
B



C



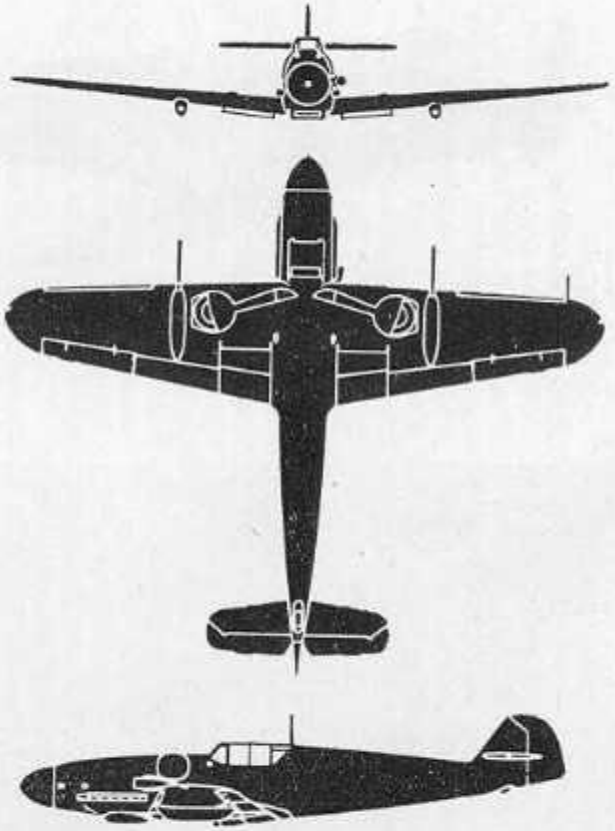
D



FIGHTER-BOMBER

REICH

MESSERSCHMITT "ME.109"



ME 109G
MESSERSCHMITT
GERMANY

DISTINGUISHING FEATURES: Single-engine, low-wing monoplane. Short, tapered wing with rounded tips. Fuselage has a pointed nose. Cockpit canopy faired into fuselage. Distinctive single fin and rudder. Thin radiator under each wing set close to fuselage. Small, high-set stabilizer.

INTEREST: Like its British counterpart, the Spitfire, the Me 109 series has formed the backbone of the German fighter force during the early stages of the war. The Me 109F was the first of the Me 109 series to have rounded wing tips instead of the square tips of the earlier series. Not much difference is apparent between the new Me 109G and the Me 109F, the principal change being a different engine, and gondolas for wing guns. Many Me 109F's are still in service but are being replaced by the newer Me 109G's. Me 109's are being used for fighting, bombing, ground attack, and reconnaissance.

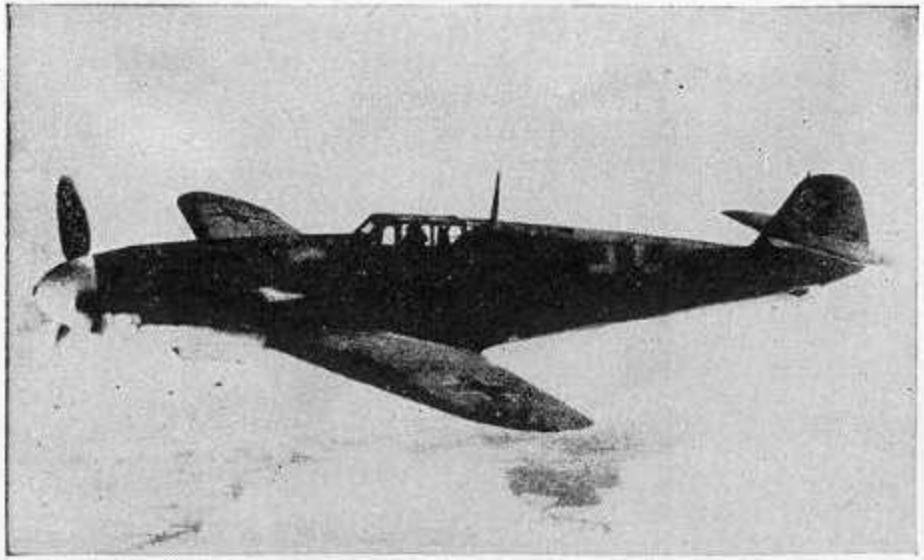
SPAN: 32 ft. 8 in.
LENGTH: 29 ft. 11 in.
MAX. SPEED: 400 m.p.h. at 22,000 ft.
SERVICE CEILING: 39,750 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

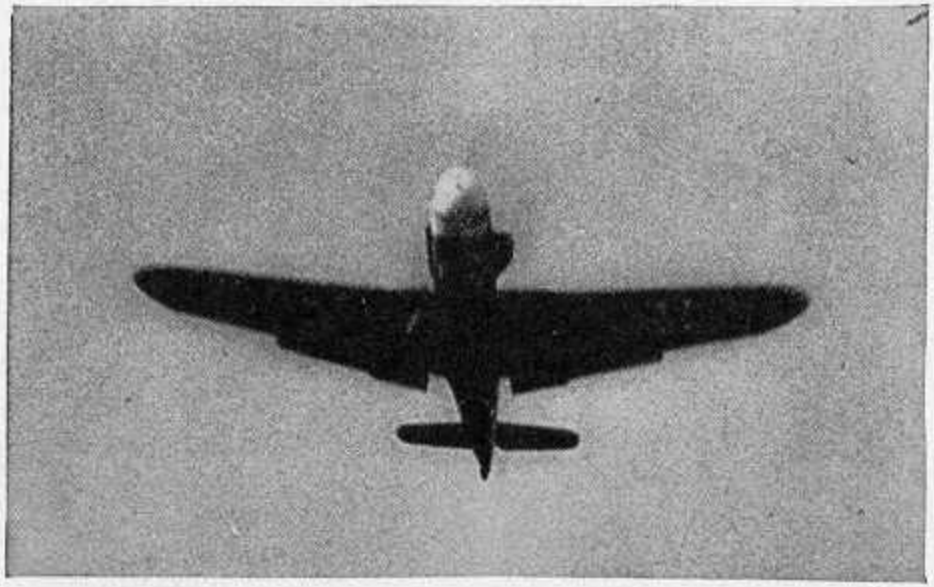
RESTRICTED

A

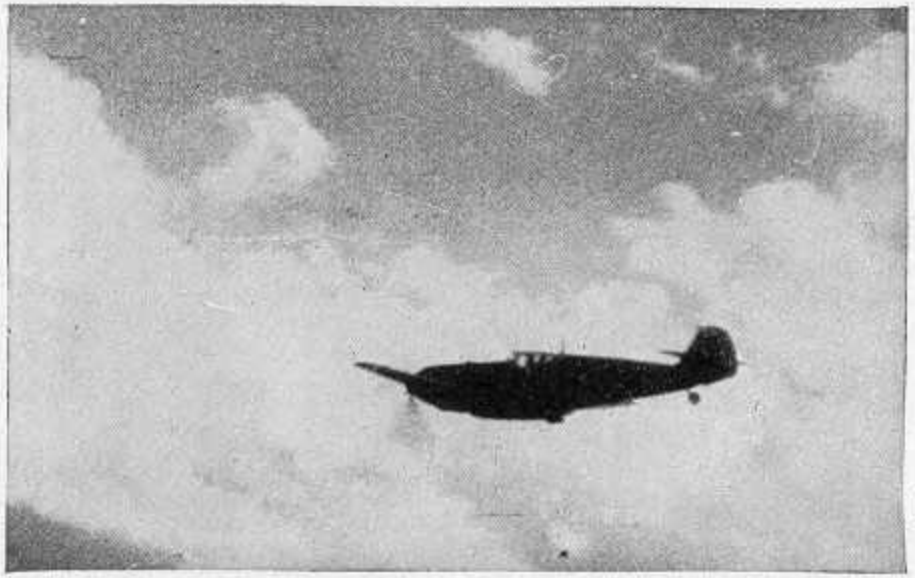


C

B



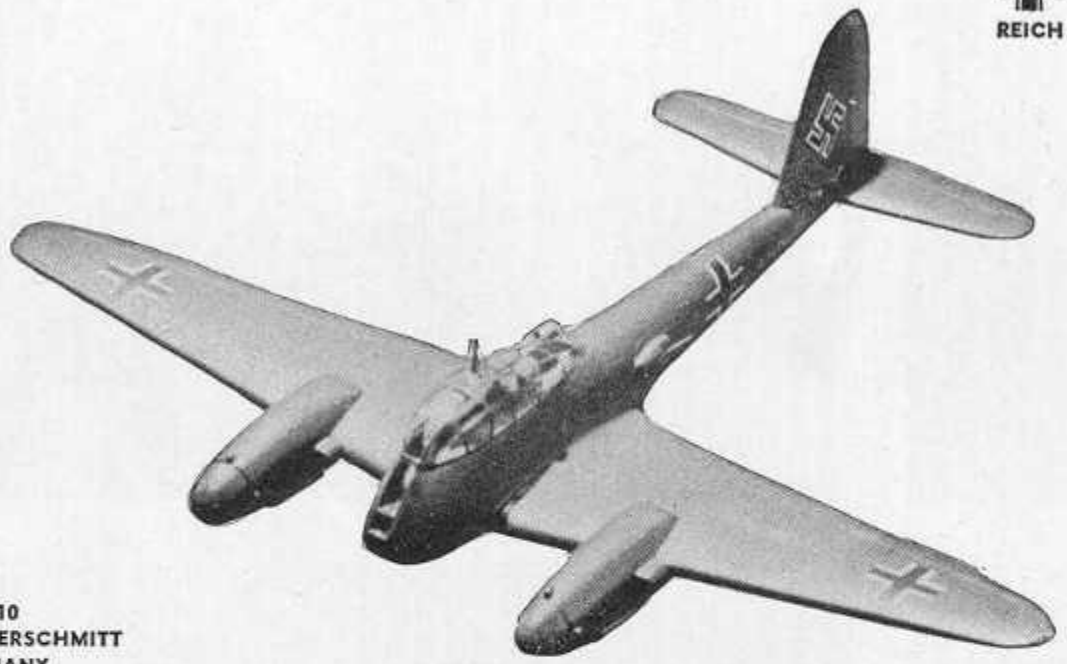
D



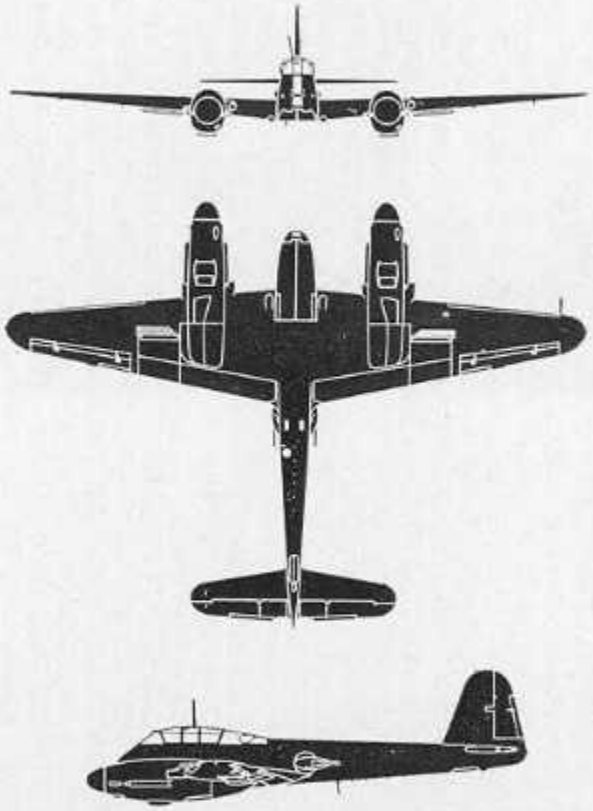
FIGHTER-BOMBER

REICH

MESSERSCHMITT "ME.410"



ME 410
MESSERSCHMITT
GERMANY



DISTINGUISHING FEATURES: Twin-engine, low-wing monoplane. Long, pointed engines protrude well forward beyond the short, blunt nose. Slim fuselage with humped cockpit canopy set forward. Sharply tapered wing with rounded tips. Full dihedral. Large tapered single fin and rudder with round top. Tapered stabilizer with round tip.

INTEREST: The Me 410, one of Germany's newest operational aircraft, differs little from the Me 210 from which it was developed. It is practically a re-engined Me 210, using the larger DB 603 engines with an almost identical airframe. It has carried out much of the enemy's recent night bombing attacks and has been encountered frequently as a fighter over the continent. It is also being used for ground attack, reconnaissance, and possibly torpedo-dropping. An interesting feature of the Me 410 is the remotely controlled "blister" barbette in the fuselage aft of the wing which mounts a 13 mm gun on either side.

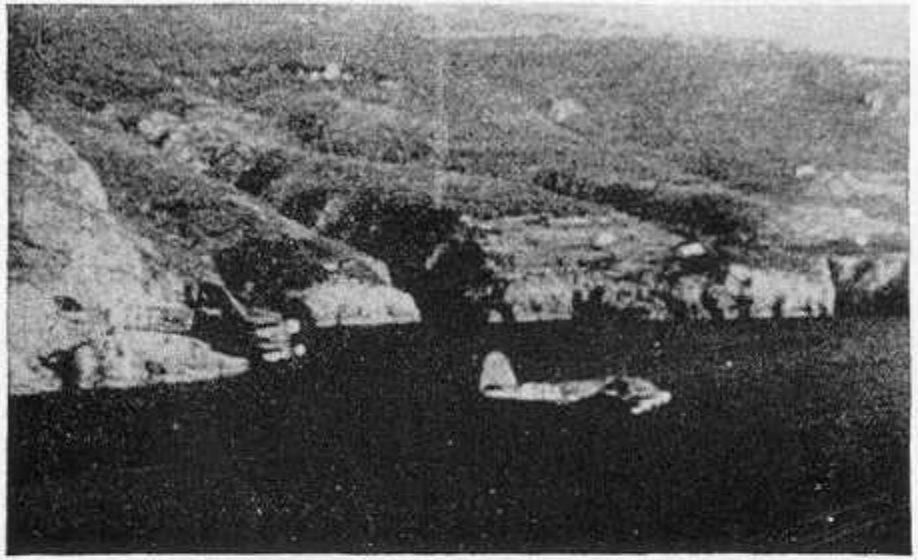
SPAN: 53 ft. 7 in.
LENGTH: 40 ft. 11 in.
MAX. SPEED: 395 m.p.h. at 22,000 ft.
SERVICE CEILING: 39,000 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

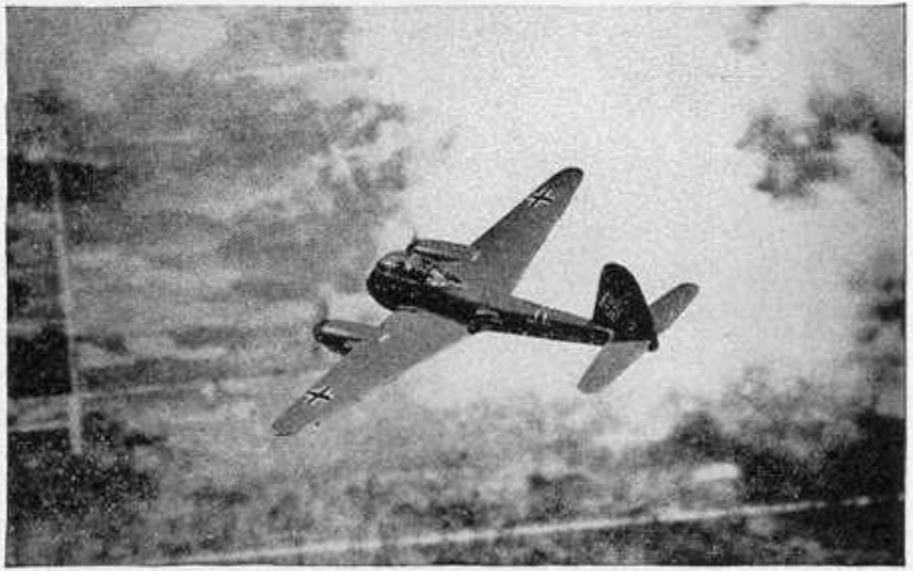
A



C

B

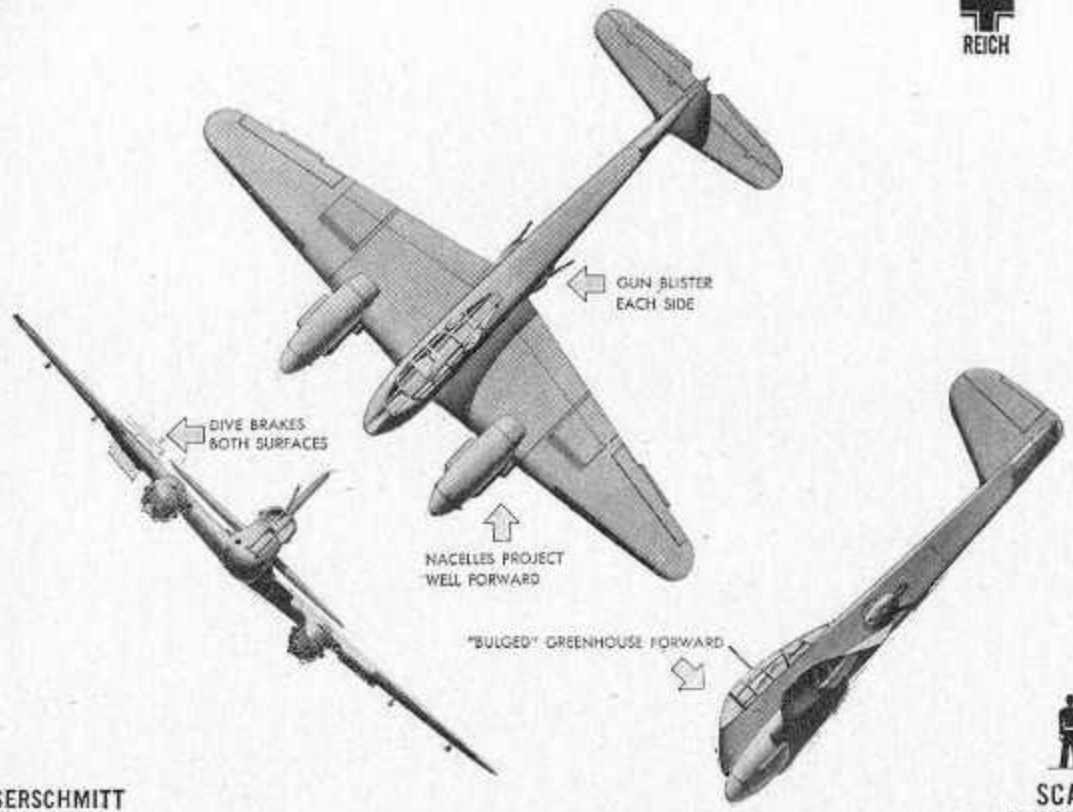
D



FIGHTER—LIGHT BOMBER

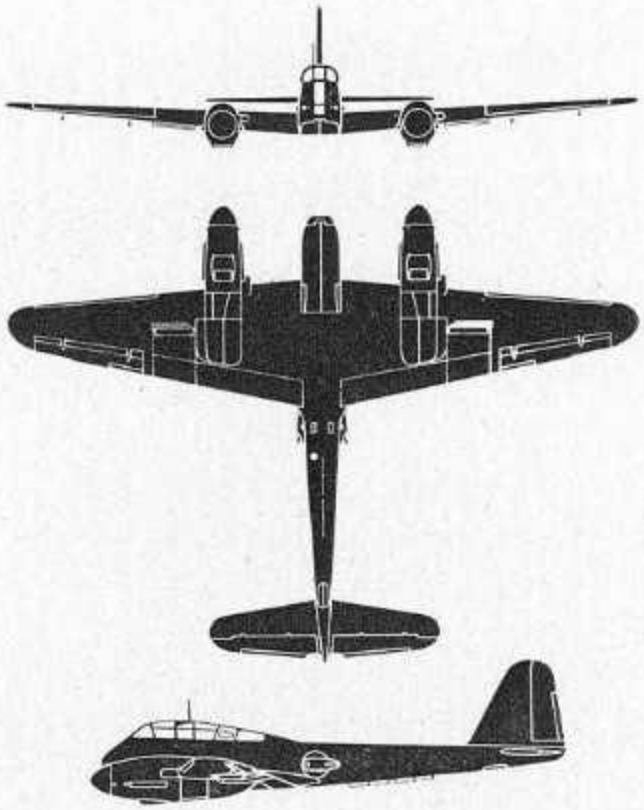
REICH

MESSERSCHMITT "ME. 210"



MESSERSCHMITT
GERMANY

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Twin in-line engine, low-wing monoplane. Wing has dihedral from the roots and equal taper to small round tips. The engines extend slightly beyond the short nose. Slim tapering fuselage with high and long streamlined cockpit enclosure. Side gun blisters. Tall prominent single fin and rudder.

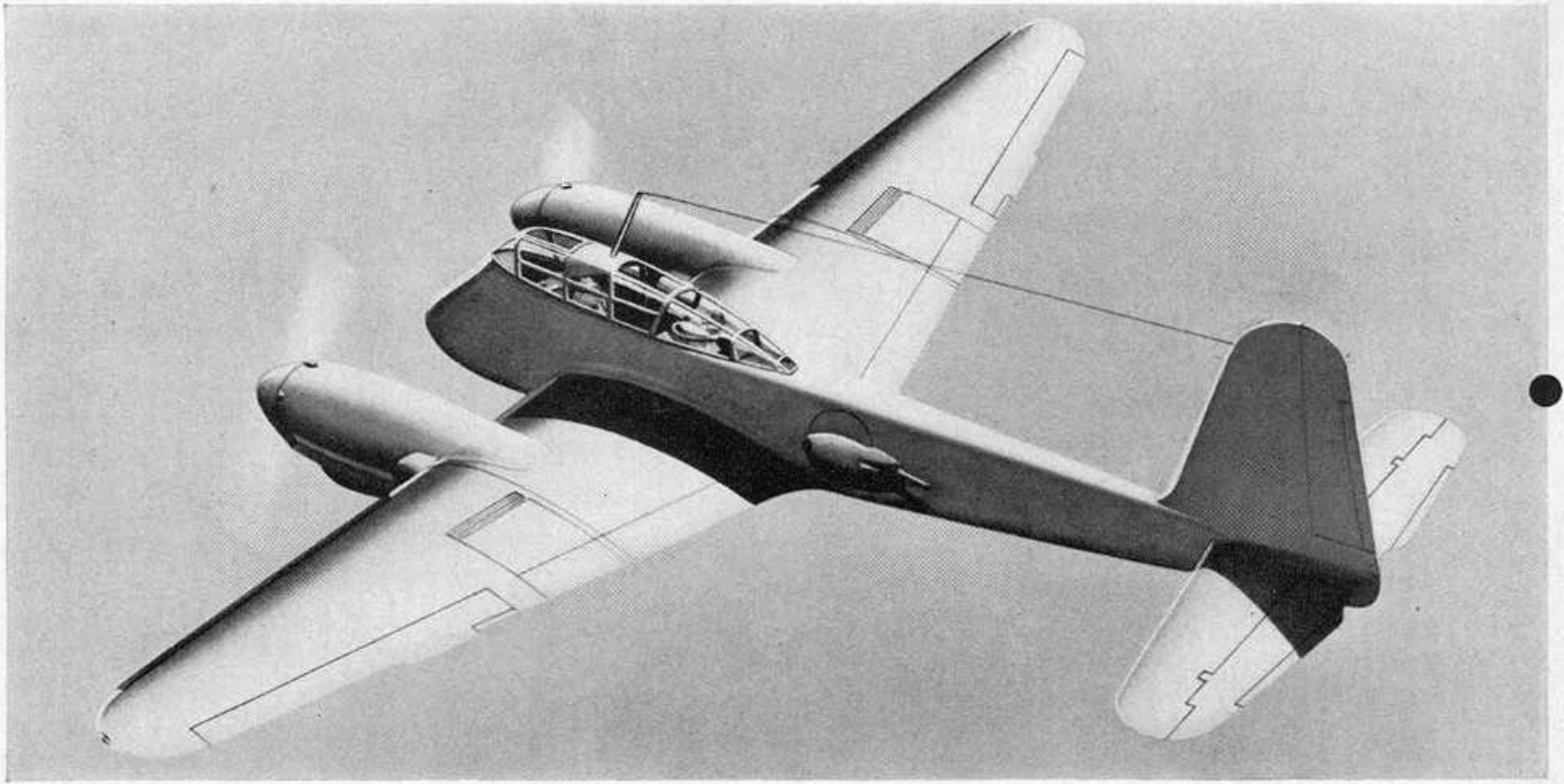
INTEREST: The first aircraft of this type was examined in September 1942. Some call it the German answer to the Mosquito. A maximum of 3,300 lbs. in bombs can be carried. The sides of the fuselage contain movable guns in revolving blisters. They are remotely controlled by the radio operator. The guns have a wide cone of fire. Sighting is done by means of a reflector sight.

SPAN: 53 ft. 6 in.
LENGTH: 40 ft. 3 in.
MAX. SPEED: 368 m. p. h. at 20,000 ft. (as fighter)
SERVICE CEILING: 28,500 ft. (no bombs)

APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 2

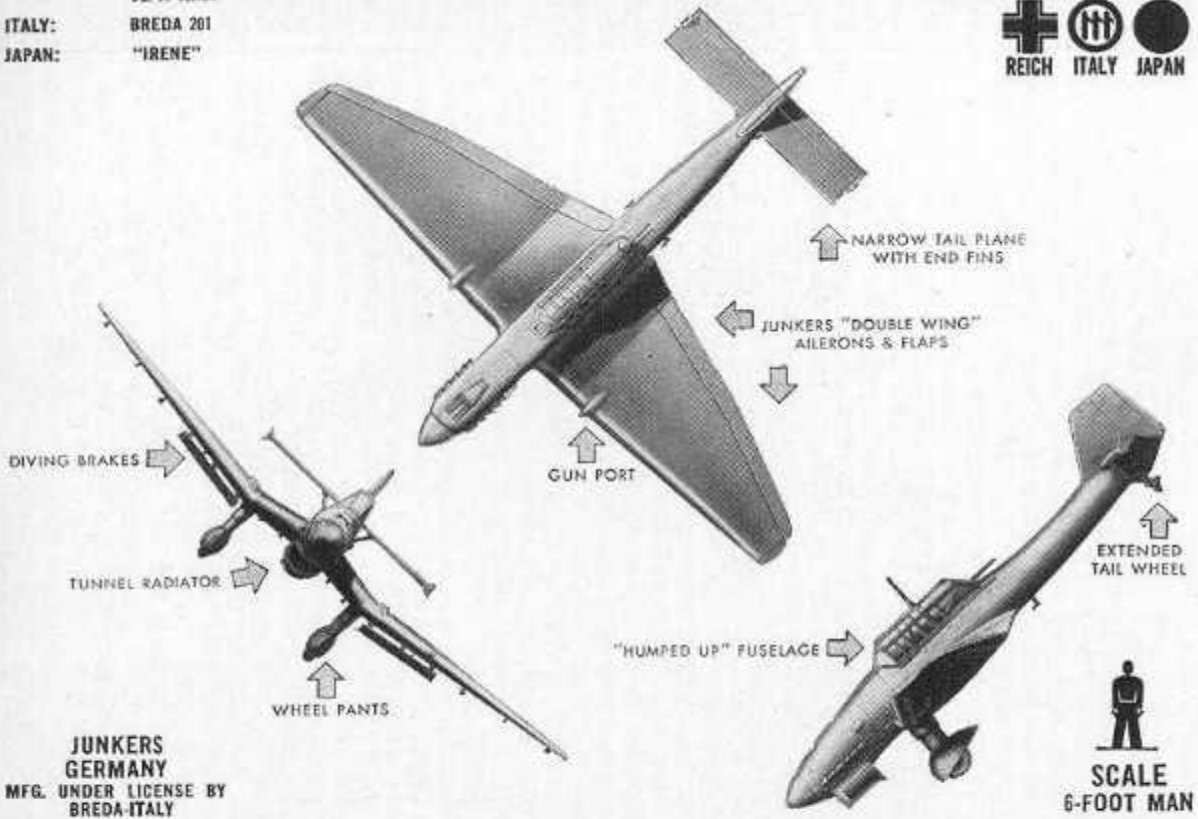
RESTRICTED



GERMANY: Ju. 87B
Ju. 87 series
ITALY: BREDA 201
JAPAN: "IRENE"

DIVE BOMBER

REICH ITALY JAPAN



JUNKERS
GERMANY
MFG. UNDER LICENSE BY BREDA-ITALY

SCALE
6-FOOT MAN

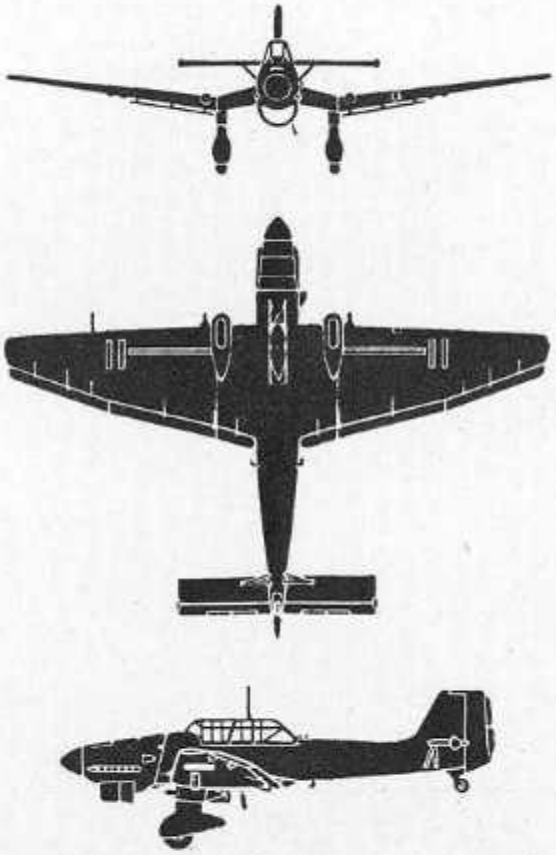
DISTINGUISHING FEATURES: Low inverted gull-wing monoplane, with in-line engine. Long nose and large spinner. Big rounded radiator below nose. Fixed landing gear with wheel fairings. Prominent square cut single fin and rudder with taper to leading edge of fin. Braced rectangular stabilizer and elevator.

INTEREST: One of the most widely used German planes, the "Stuka" has proved to be extremely vulnerable. Hundreds of these planes have been shot down by Allied air pilots and by A. A. fire. During the fighting in Poland and the Low Countries, this dive bomber earned a reputation as ugly as its appearance. A later model, the JU 87D is now in use (Photo B). It has a modified cockpit cover and a less conspicuous radiator. The plane is also manufactured by Breda in Italy and is then known as the BR 201. A captured report indicates that one modification, the Ju 87C-1, has jettisonable undercarriage that can be dropped to get increased speed in an emergency.

APRIL 1941
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER

JUNKERS "JU. 87" "STUKA"



SPAN: 45 ft. 4 in.
LENGTH: 36 ft. 6 in.

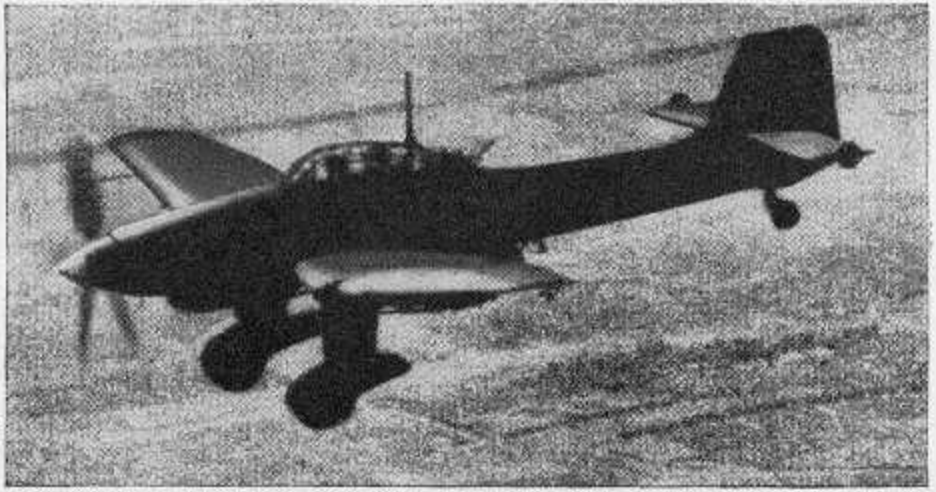
SERVICE CEILING:
30,000 ft. (not loaded)
25,000 ft. (normal load)

MAX. SPEED: 225 m. p. h. at 15,000 (with load)
245 m. p. h. at 15,000 (bombs unloaded)

RESTRICTED

A

B



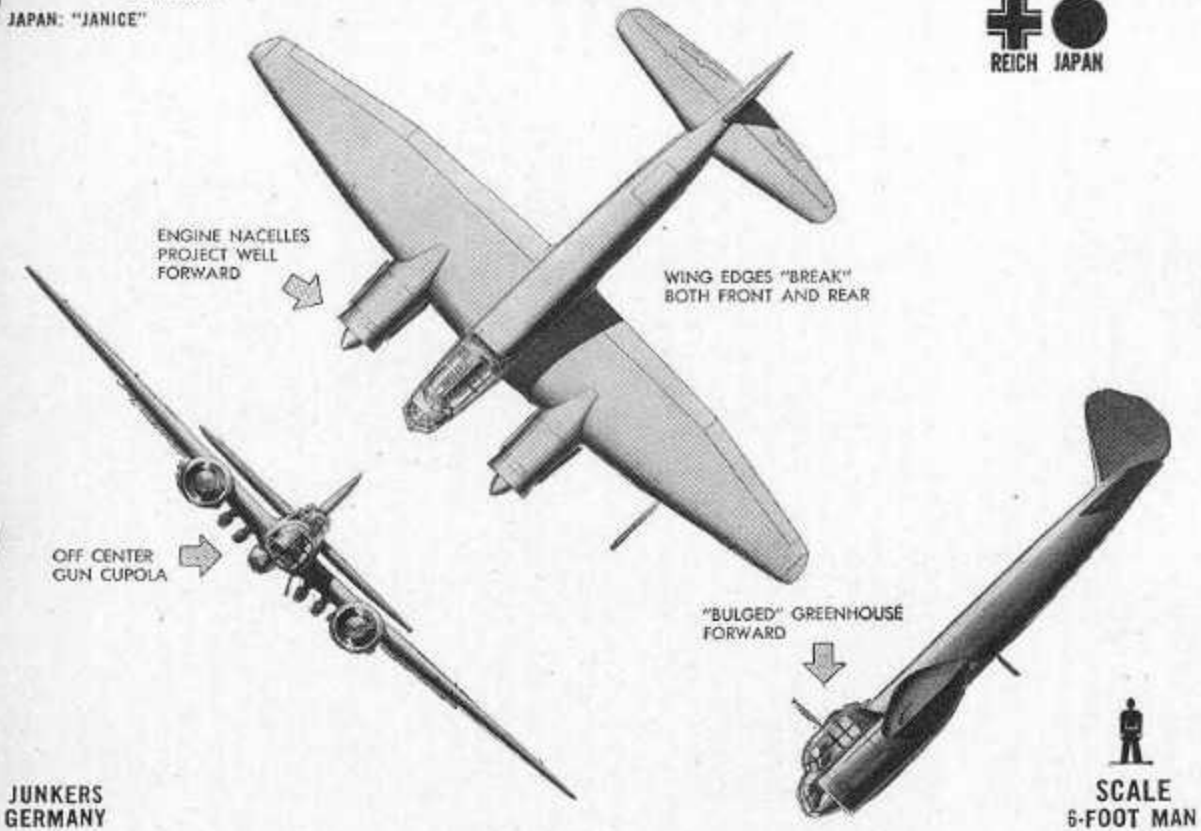
C

GERMANY: Ju. 88A-6
Ju. 88 series
JAPAN: "JANICE"

MEDIUM BOMBER–FIGHTER

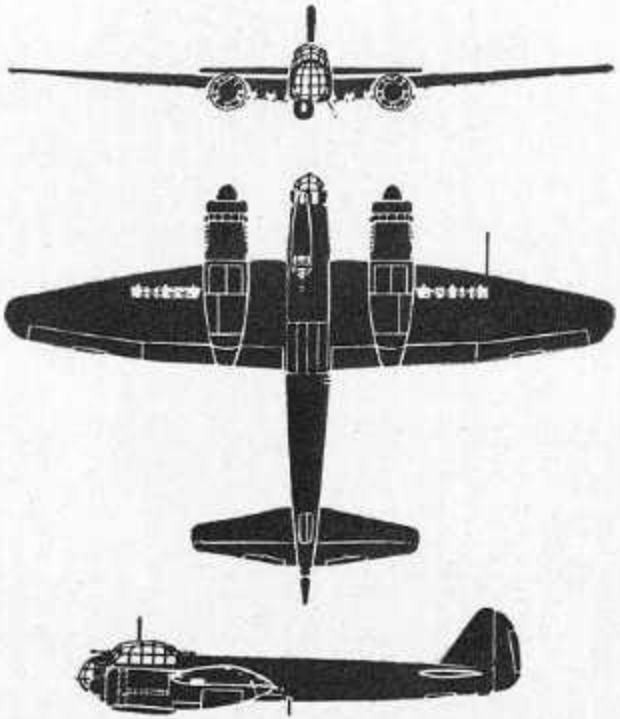
REICH JAPAN

JUNKERS "JU. 88"



JUNKERS
GERMANY

SCALE
6-FOOT MAN



SPAN: 66 ft.
LENGTH: 47 ft.

SERVICE CEILING:
30,000 ft. (no load)
19,000 ft. (normal load)

MAX. SPEED: 287 m. p. h. at 14,000 ft. (no load)
269 m. p. h. at 14,000 ft. (loaded)

DISTINGUISHING FEATURES: Twin-engine low-wing monoplane. Heavy radial-type engine nacelles protrude well out from wing. Engines in line with nose. Narrow fuselage with off-center bomber's position under nose. Wings tapered in outer panels with rounded tips. Cockpit well forward. Tapered stabilizer and elevators with blunt tips. Single fin and rudder. Rudder projects well beyond elevators.

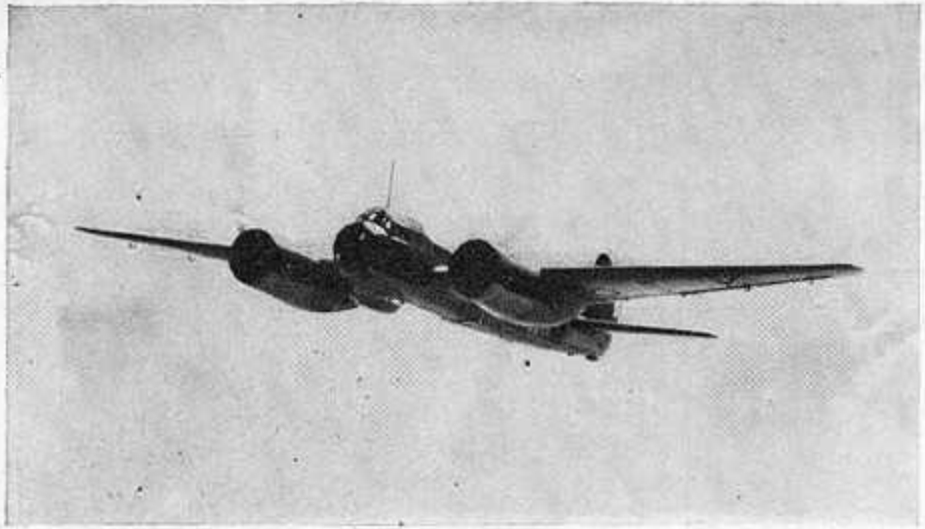
INTEREST: The Ju-88 is one of the chief offensive weapons of the Nazis. In service on all fronts, it is used as a day and night fighter and for dive and level bombing of both land and sea targets. Its liquid-cooled engines resemble radials because of the circular radiators. The bomber version of this aircraft can be fitted with jettisonable rocket devices under the wings to assist in take-off. Because of the many uses to which the Ju-88 is put, there are a number of different arrangements in armament and some structural variations.

APRIL 1942
FROM DATA CURRENTLY AVAILABLE

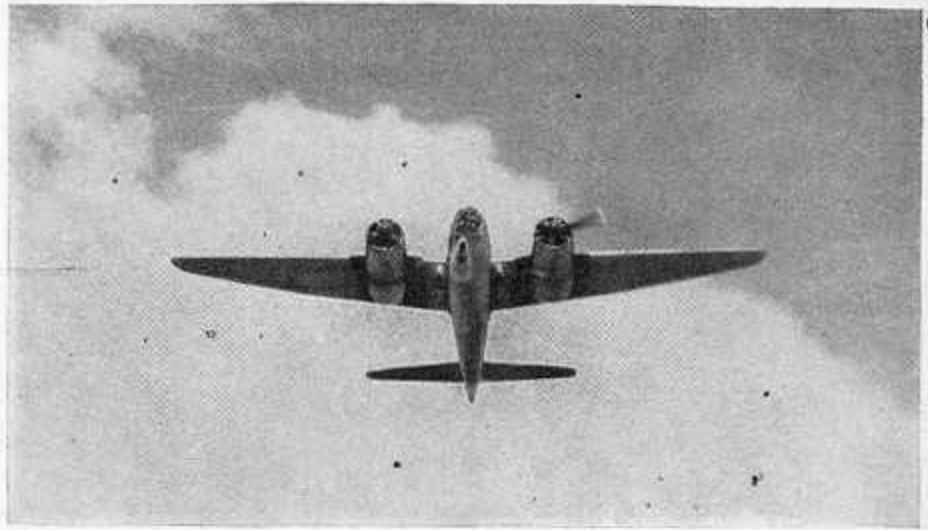
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

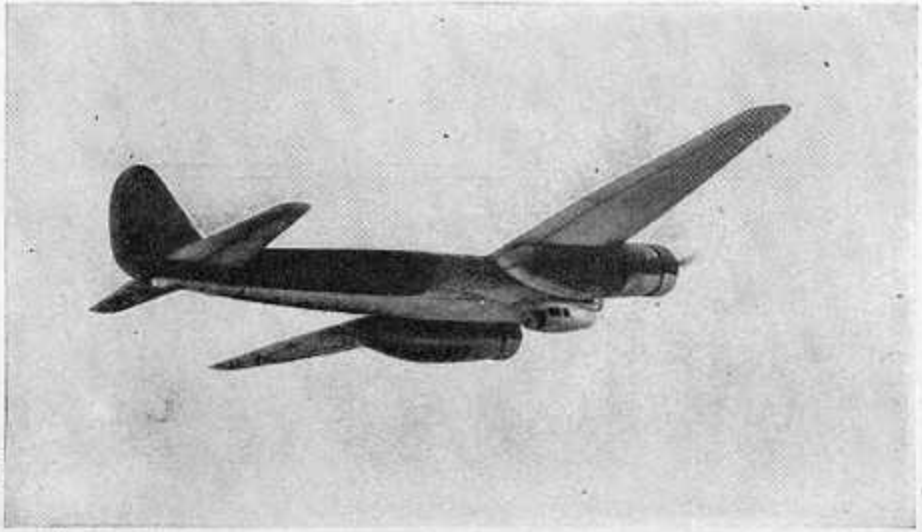
A



C



B

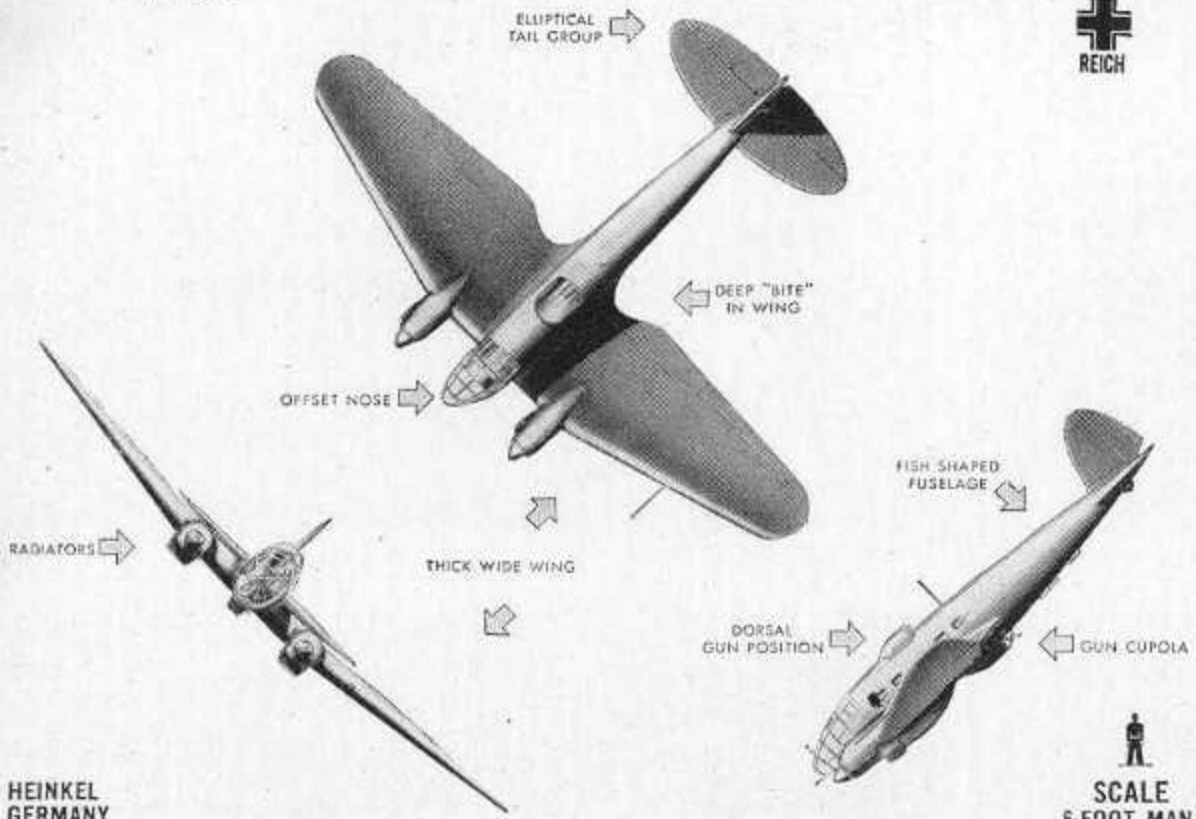


D

GERMANY: He. 111K
He. 111 series

MEDIUM BOMBER

REICH



HEINKEL
GERMANY

SCALE
6-FOOT MAN

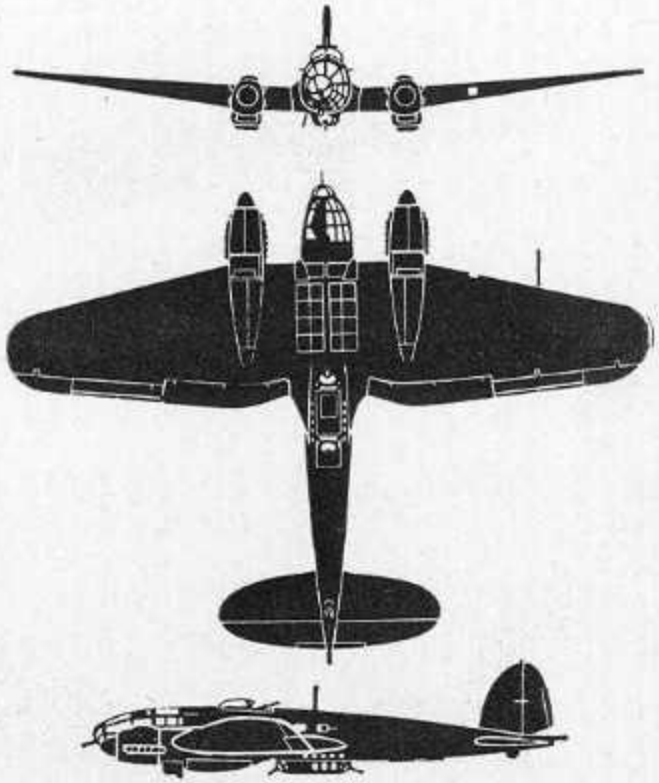
DISTINGUISHING FEATURES: Twin-engine low-wing monoplane with pronounced taper on leading edge of wing. Slightly tapered trailing edge, with "bite" at wing roots. Twin in-line engines underslung and protruding forward nearly as far as nose. Fuselage broken by ventral gun position just aft of wings, and by dorsal gun position above wings. Large transparent nose is off center to allow pilot vision past nose gunner. Large curved fin and rudder with cut-out to allow free elevator movement. Large elliptical stabilizer and elevator.

INTEREST: This bomber has undergone continuous improvement since it first appeared in 1935. The latest version, He 111 H-6 carries bombs or 2 torpedoes and has been used against Russian-bound convoys and in the Mediterranean. The aircraft is sometimes provided with rocket or some other type of "assisted take-off" equipment.

APRIL 1945
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

HEINKEL "HE. 111"



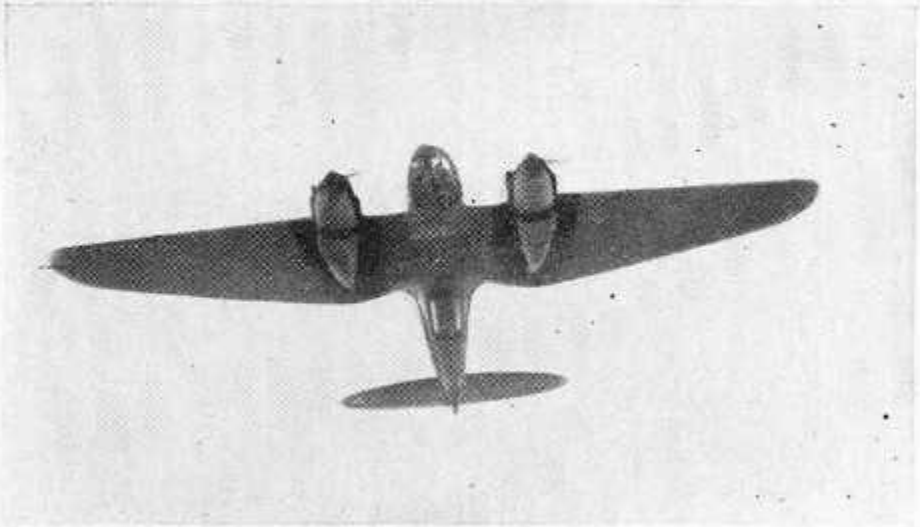
SPAN: 73 ft. 11 in.
LENGTH: 53 feet 8 in.

SERVICE CEILING:
31,500 feet (not loaded)
26,500 feet (normal load)

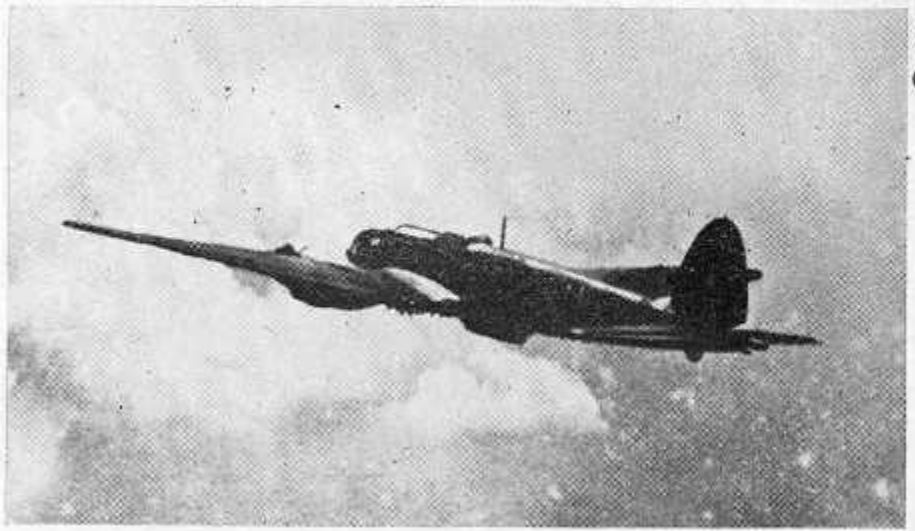
MAX. SPEED: 255 m. p. h. at 16,000 ft.

RESTRICTED

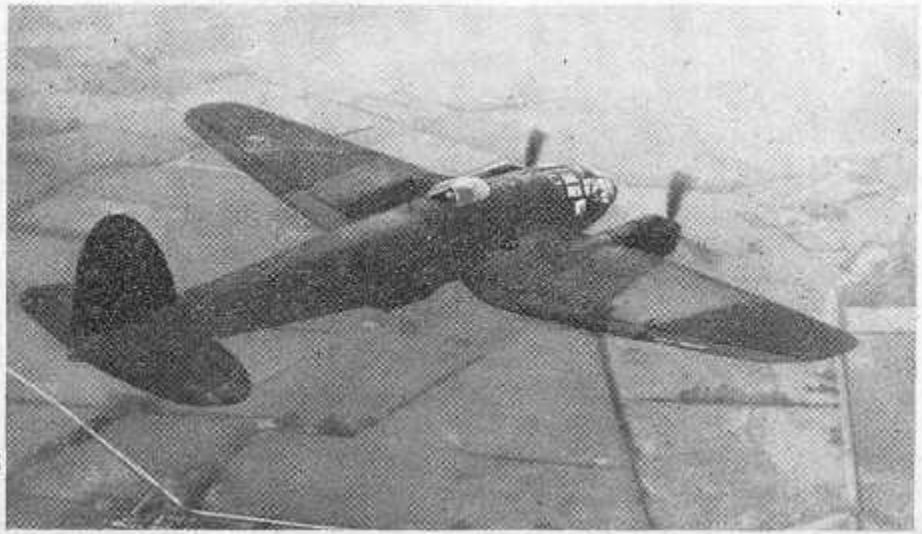
A



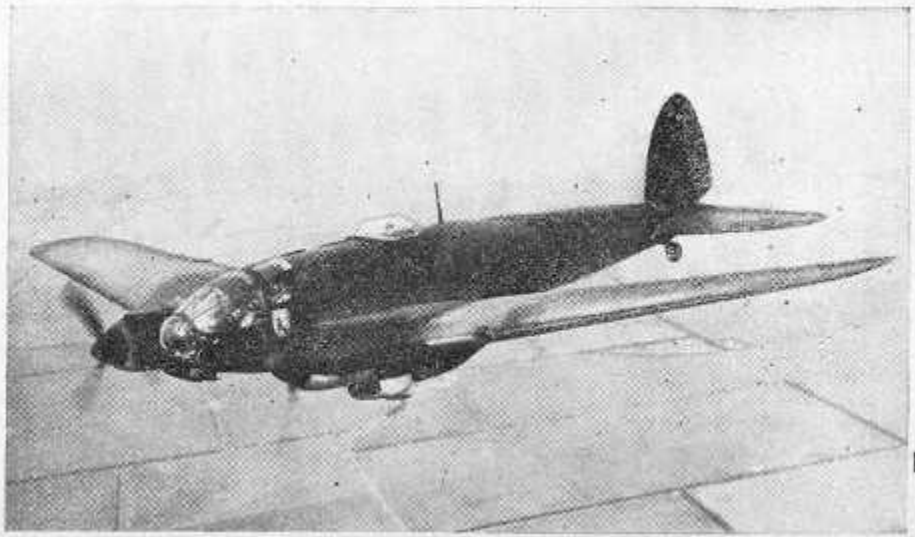
C



B



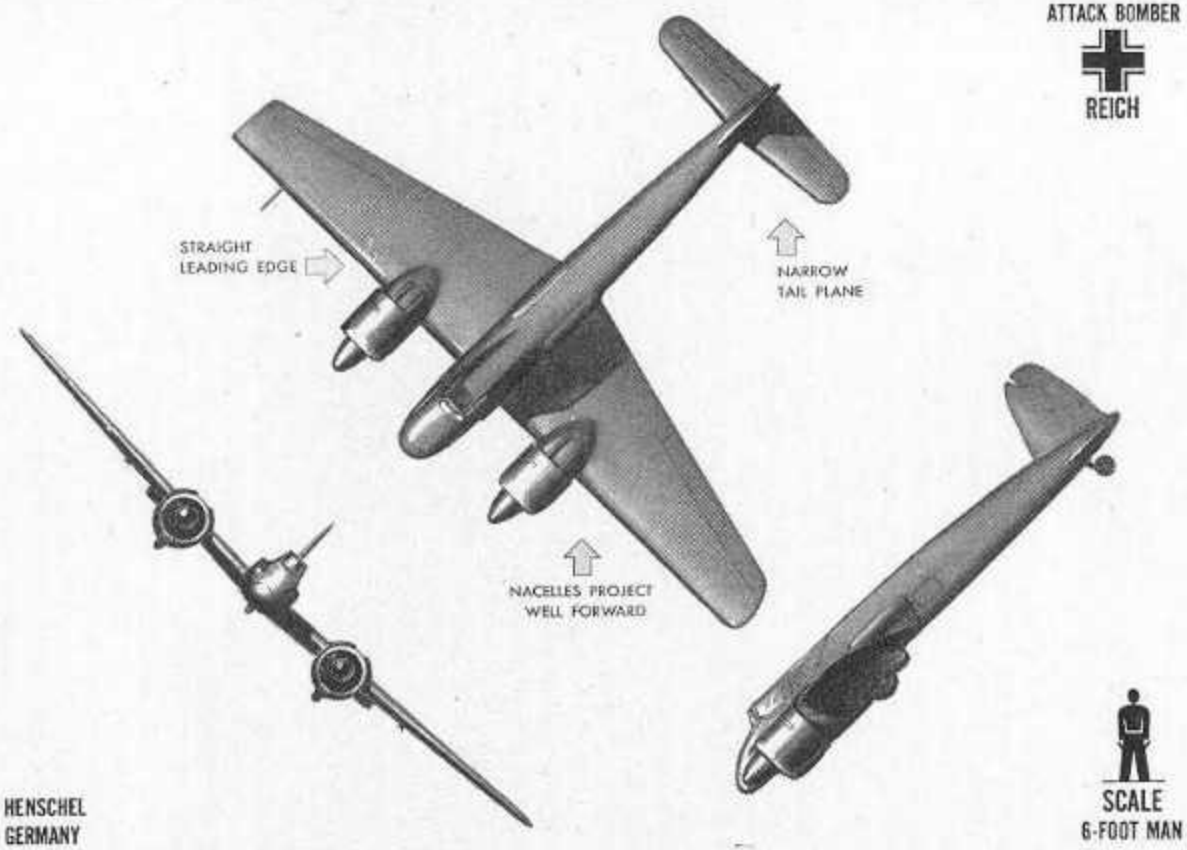
D

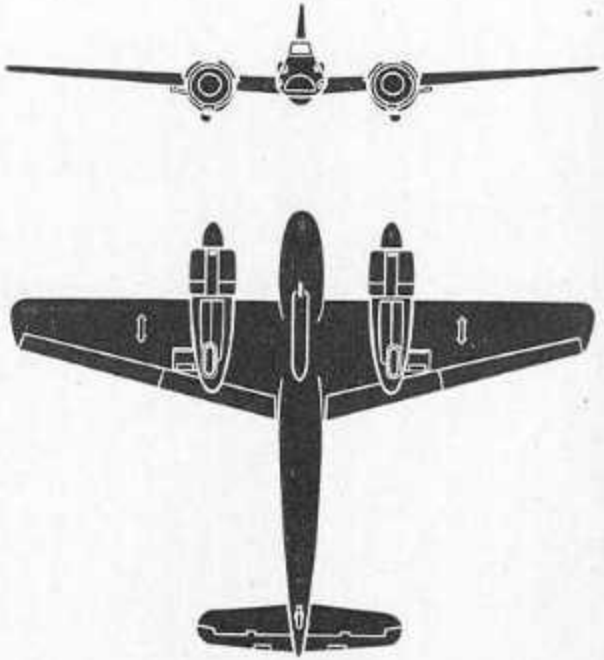


ATTACK BOMBER

REICH

HS. 129





HENSCHEL
GERMANY

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Twin-engine, low-wing monoplane. The two radial engines are underslung and project forward nearly as far as the nose. Wings have straight leading edge, tapered trailing edge, and blunt tips. Fuselage tapers to point at tail and has gun trough below extending slightly forward of wing. Nose is broad and slopes sharply to point from pilot's cockpit. Tailplane tapers very slightly and has round tips. Prominent single fin and rudder with broad rounded top.

INTEREST: The HS. 129 is the standard ground-attack airplane of the German Air Force. It was developed for close cooperation with the Army and is noted for its heavy armor and armament. Originally fitted with Argus air-cooled "V" engines, the HS. 129 is now fitted with Gnome-Rhone air-cooled radial engines. It may be seen with bomb rack in place of gun trough below fuselage.

SPAN: 44 ft. 6 in.
LENGTH: 33 ft. 3 in.
SERVICE CEILING: 24,500 ft. with normal load
MAX. SPEED: 275 m. p. h. at 9,000 ft.

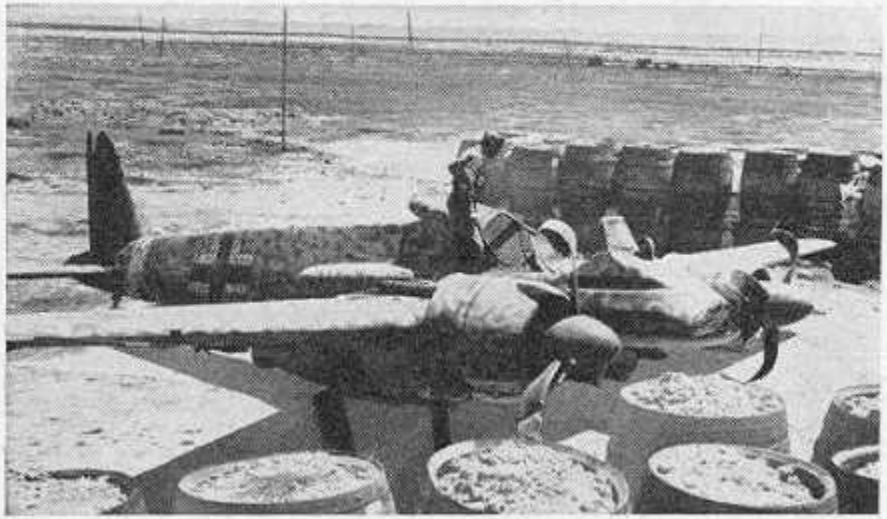
NOV. 1943
FROM DATA CURRENTLY AVAILABLE

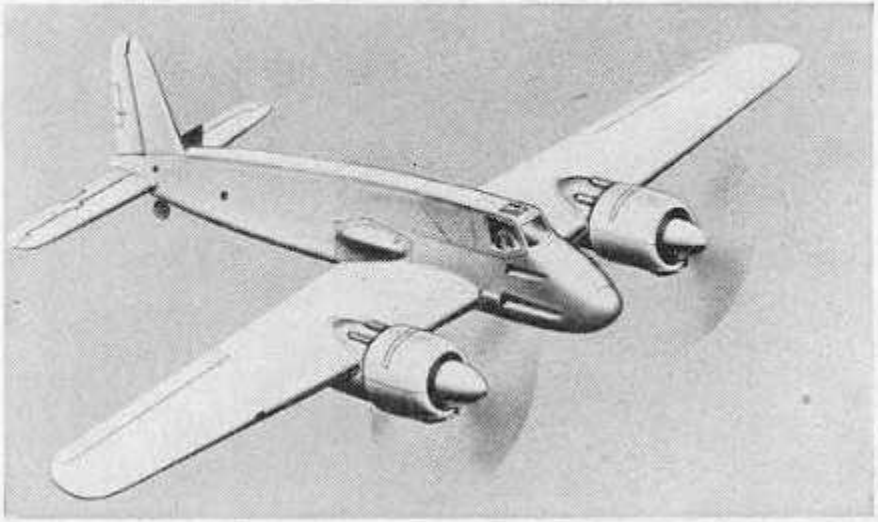
SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A

B



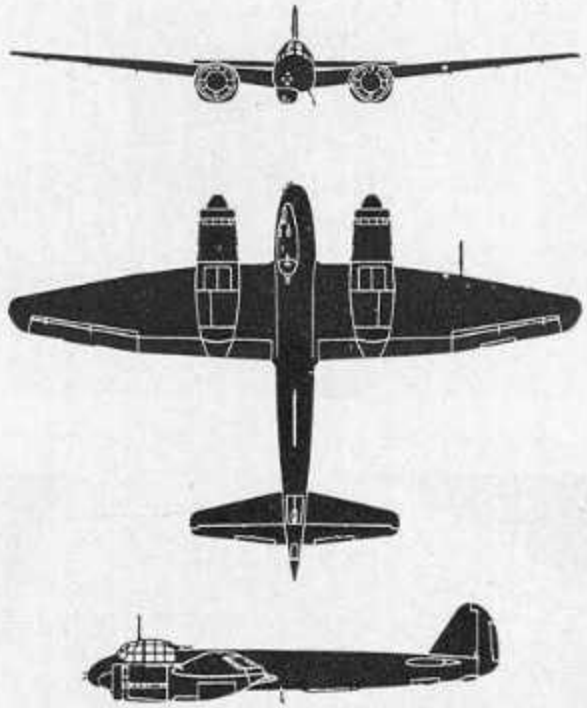


C

MEDIUM BOMBER-FIGHTER

REICH

JUNKERS "JU. 88"



JU 88A, C
JUNKERS
GERMANY

DISTINGUISHING FEATURES: Twin-engine, low-wing monoplane. Heavy radial-type engine nacelles protrude well forward, nearly on line with nose. Wing tapered in outer section with rounded tips. Full dihedral. Slim fuselage with humped cockpit canopy set well forward. Offset "bola" under nose. Tapered stabilizer with blunt tips. Distinctive single fin and rudder.

INTEREST: The Ju 88 is the all-purpose aircraft of the Luftwaffe. Originally designed as a bomber, it has been modified extensively for other duties. The Ju 88A series, the bomber version with transparent nose, and the Ju 88C series, the fighter version with solid nose, have been the principal operational types. Some subtypes have inverted "V", liquid-cooled engines, enclosed in circular cowlings resembling radials while some have true radial engines. Ju 88's have seen service in great numbers and have performed nearly every type of duty.

SPAN: 65 ft. 11 in.
LENGTH: 47 ft. 0 in.

SERVICE CEILING:
32,500 ft. (bomber)
33,000 ft. (fighter)

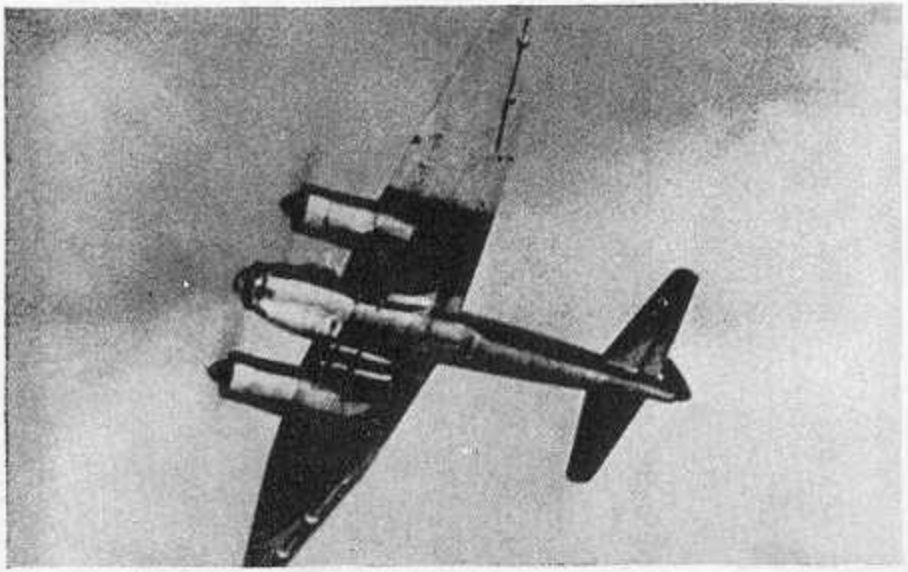
MAX. SPEED: 291 m.p.h. at 14,000 ft. (bomber)
347 m.p.h. at 20,000 ft. (fighter)

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

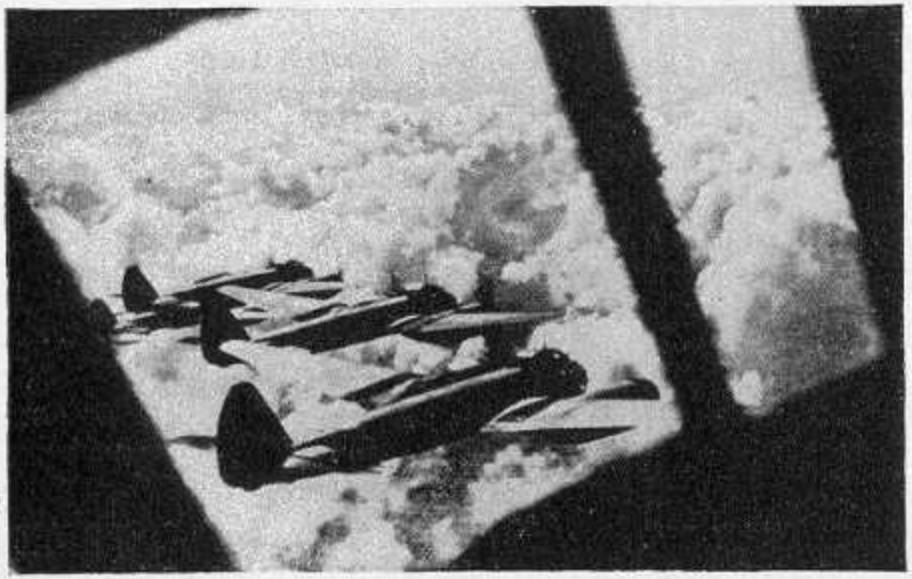
RESTRICTED

A

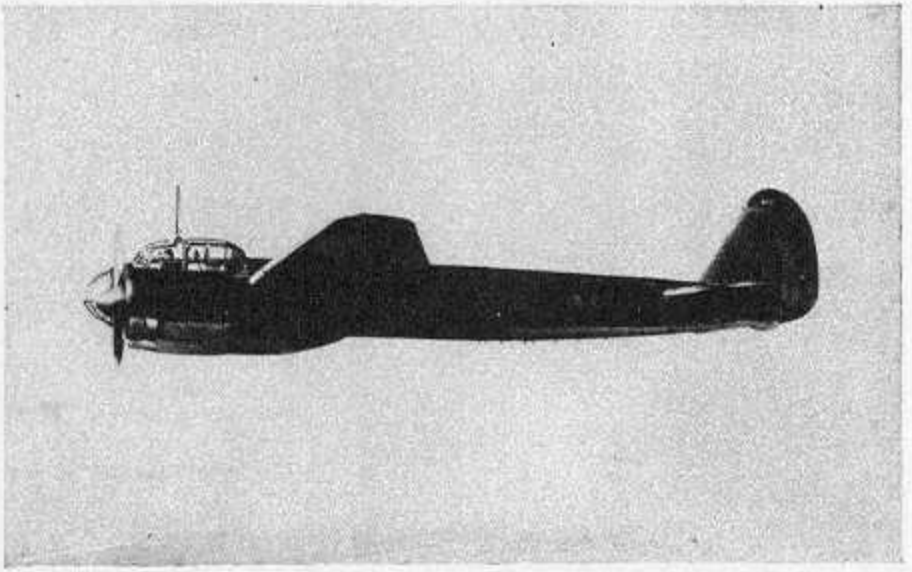


C

B



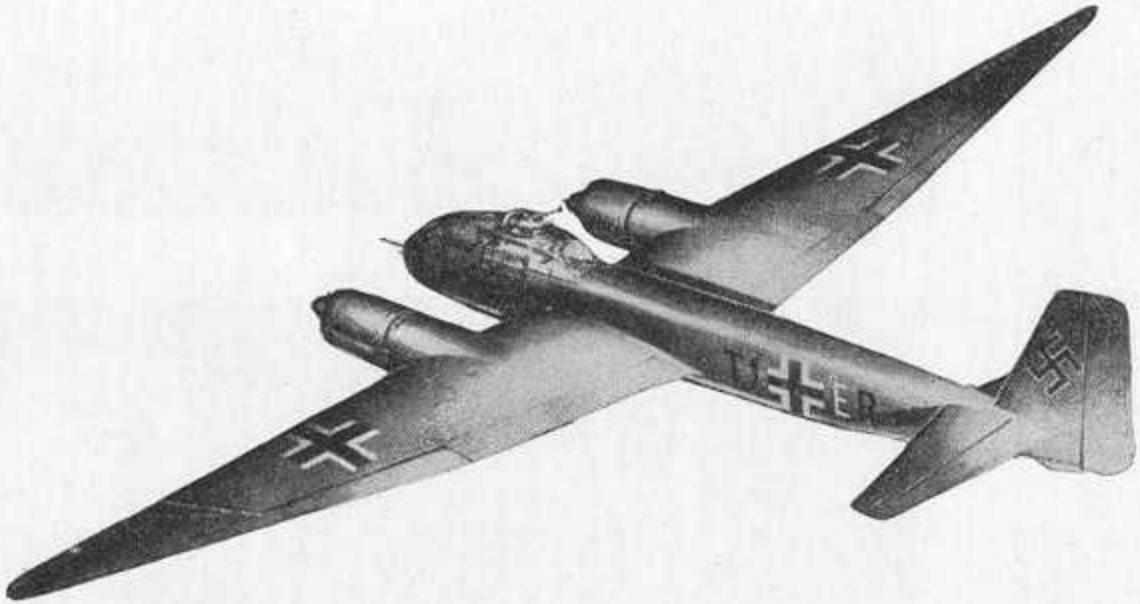
D



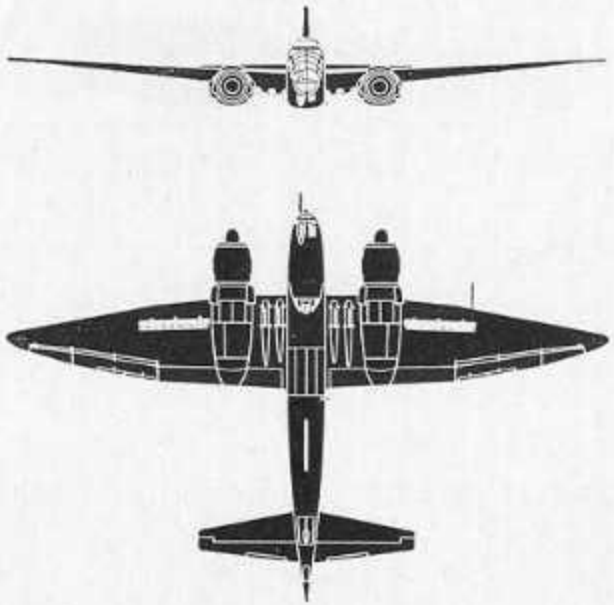
MEDIUM BOMBER

REICH

JUNKERS "JU. 188"



JU 188
JUNKERS
GERMANY



DISTINGUISHING FEATURES: Twin-engine, low-wing monoplane. Wing tapers in broken curve to pointed tips. Slim fuselage with deep, bulbous nose. Wing has full dihedral. Tapered stabilizer with blunt tips. Angular single fin and rudder.

INTEREST: The Ju 188 is a heavily armed, fast medium bomber developed from the Ju 88. It is somewhat larger than the Ju 88 with redesigned wing of increased span, enlarged cockpit, and completely new tail unit. Ju 188's have been in operation over England and various units on the Russian front are reported to have been equipped with them. It is powered by two BMW 801 G-2 air-cooled radial engines and is used for bombing, reconnaissance, and anti-shipping duties.

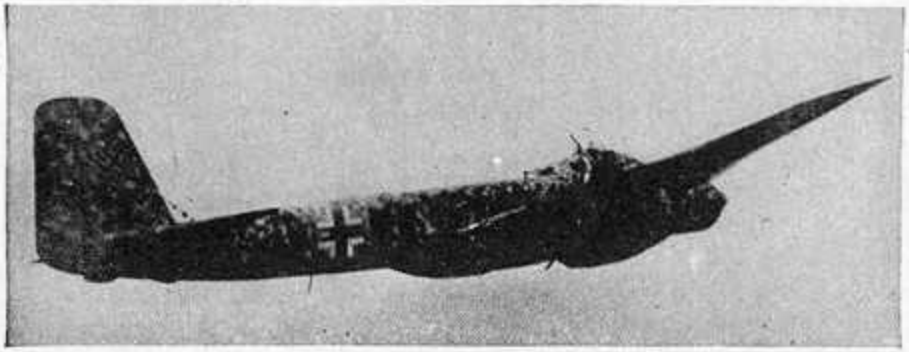
SPAN: 72 ft. 6 in.
LENGTH: 49 ft. 0 in.
MAX. SPEED: 325 m.p.h. at 20,000 ft.
SERVICE CEILING: About 33,000 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

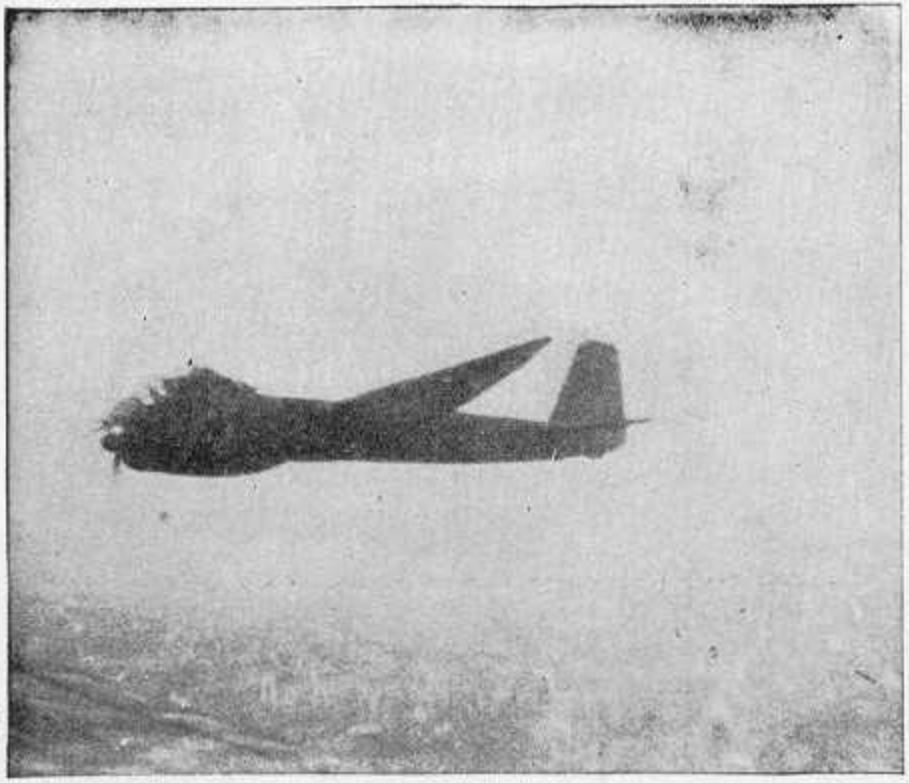
RESTRICTED

A



C

B

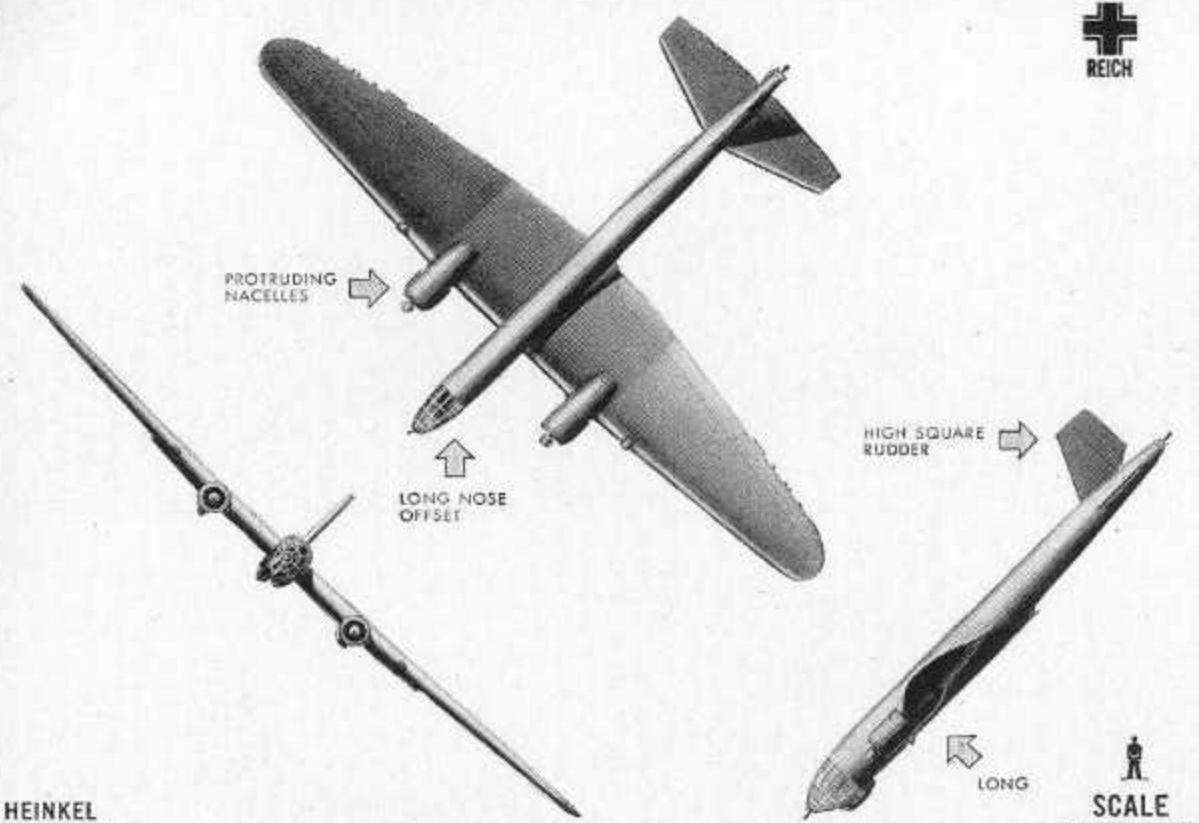


D

HEAVY BOMBER

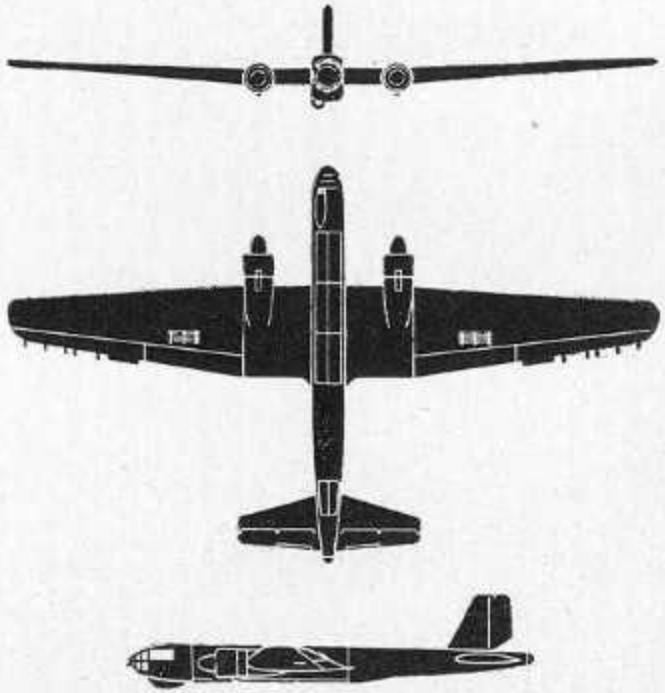
REICH

HEINKEL "HE. 177"



SCALE
6-FOOT MAN

HEINKEL
GERMANY



DISTINGUISHING FEATURES: Mid-wing monoplane with two radial-type engine nacelles. Wings tapered on outer panels. Long fuselage with rounded nose projecting far beyond engine nacelles. Single fin and rudder, large and angular as also are the stabilizer and elevators.

INTEREST: This aircraft became operational late in 1941. Designed primarily as a long-range "anti-blockade" aircraft, the He 177 may be employed also for short and medium range bombing, dive bombing, mine laying, torpedo dropping, and reconnaissance. A unique feature of this bomber is that each of its two engine nacelles contains really two engines geared to drive a single four blade propeller. The landing gear under each nacelle consists of 2 wheels which apparently retract spanwise and in opposite directions into the wings. Reports refer to a special high altitude version with pressure cabin.

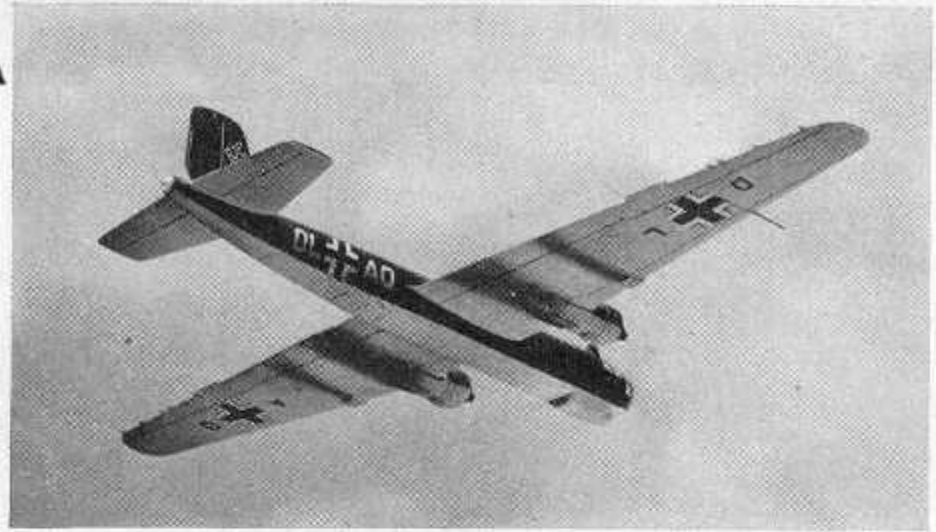
SPAN: approx. 103 ft.
LENGTH: approx. 65 ft.
MAX. SPEED: 300 m. p. h. at 18,000 ft. (est.)
SERVICE CEILING: 23,500 ft.

RESTRICTED

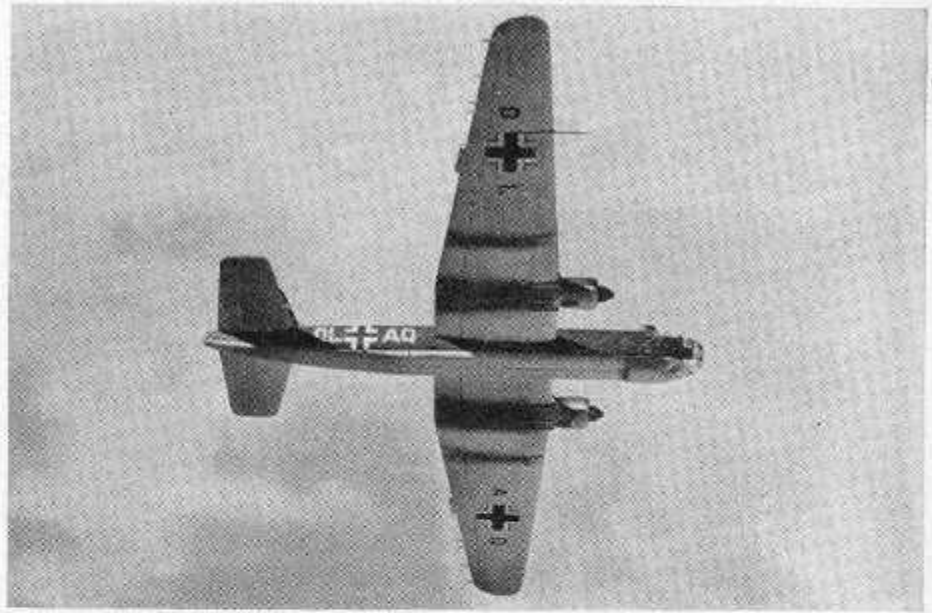
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

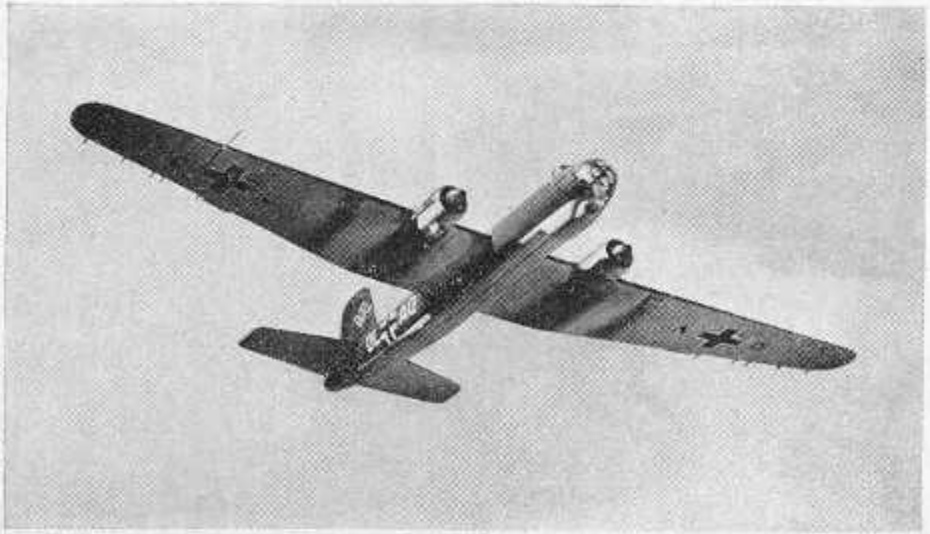
A



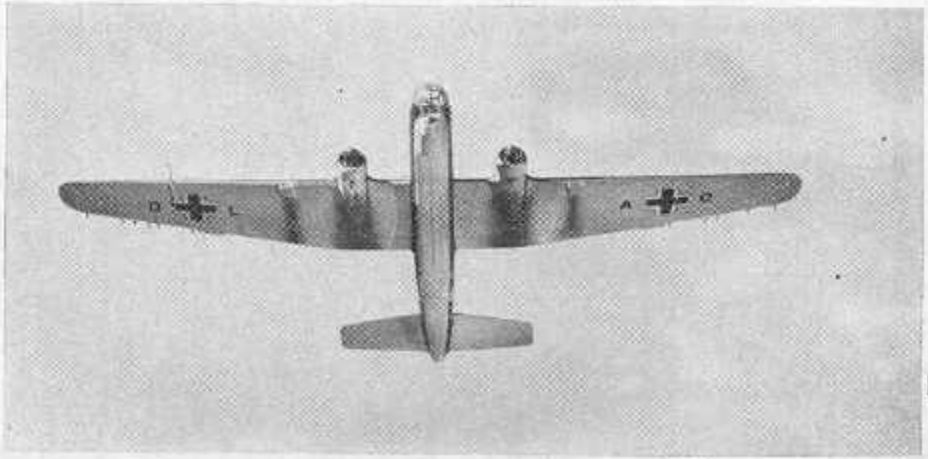
C



B



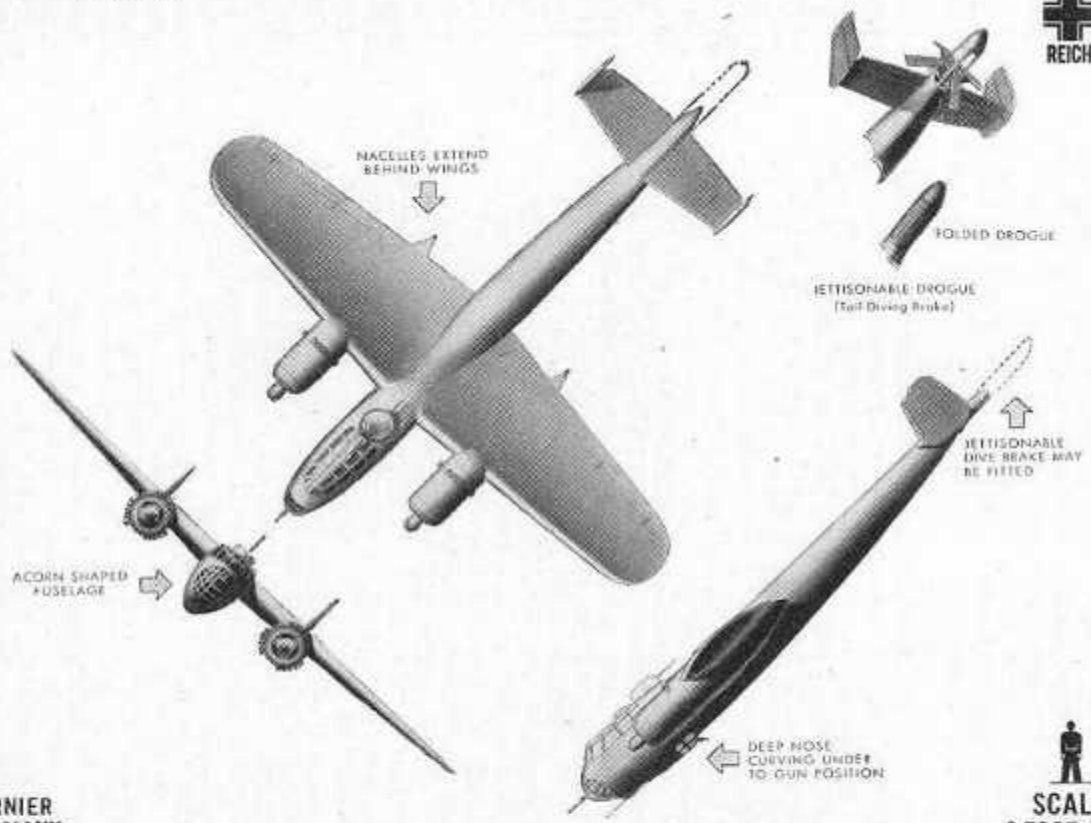
D



GERMANY: Do. 217 E-2
Do. 217 series

HEAVY BOMBER

REICH



DORNIER
GERMANY

SCALE
6-FOOT MAN

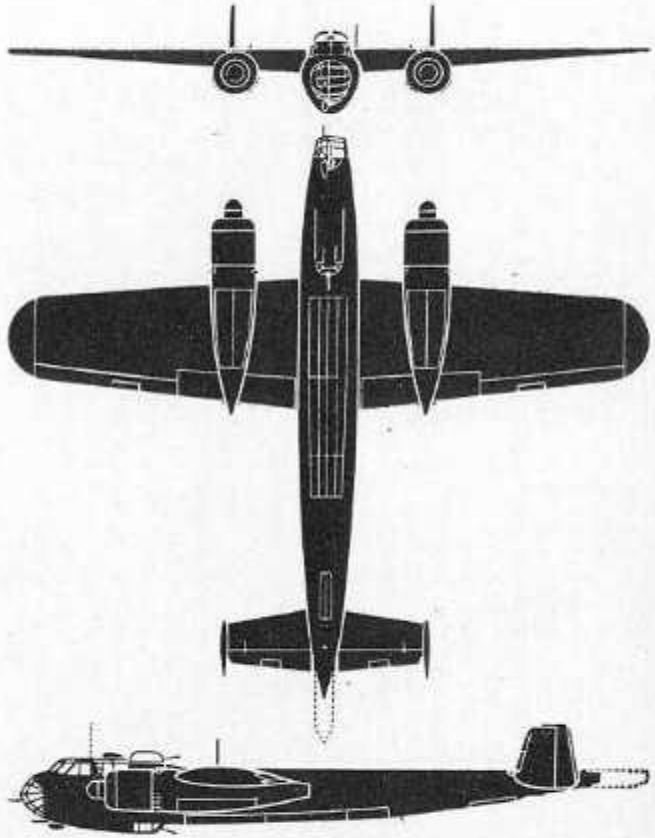
DISTINGUISHING FEATURES: Twin-engine, shoulder-wing monoplane. Short tapered wings with round tips. No dihedral. In side view, a long thin fuselage with thick nose. Dorsal turret in rear of cockpit. Twin fins and rudders set outboard of stabilizer.

INTEREST: This aircraft was introduced during the first part of 1942. It is used for level precision bombing and has also been in action as a torpedo bomber against convoys. In addition, this Dornier operates as a dive bomber and for this purpose may carry a novel "umbrella"-type jettisonable diving brake in its tail, used to slow its speed. The Do 217's are very formidable airplanes and it takes the most modern of fighters to deal with them. They are the current Dornier bomber, the older Do 17Z being obsolete. Several modifications differing somewhat in detail are in use.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

DORNIER "DO. 217"

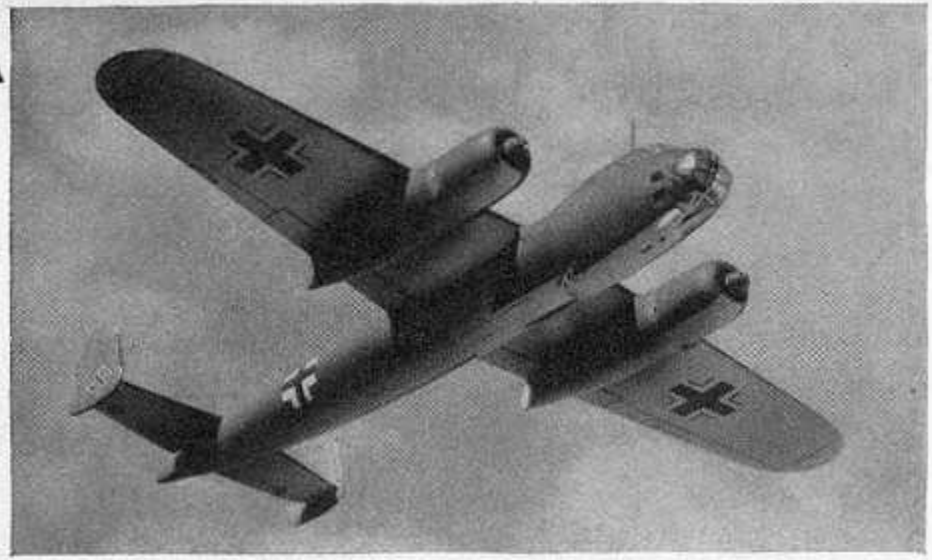


SPAN: 62 ft. 5 in.
LENGTH: 56 ft. 6 in.

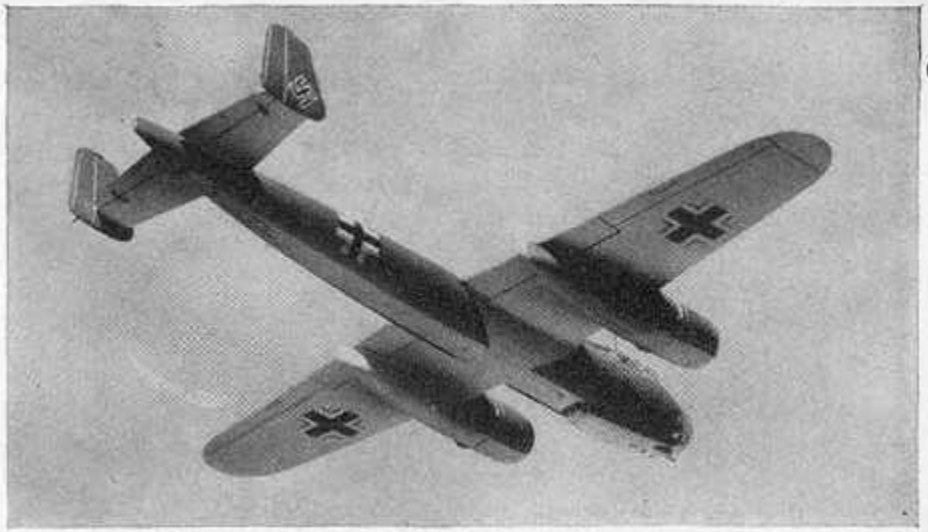
SERVICE CEILING:
29,000 ft.
(with normal load, 22,500 ft.)

APPROX. SPEED: 325 m. p. h. at 17,000 ft.

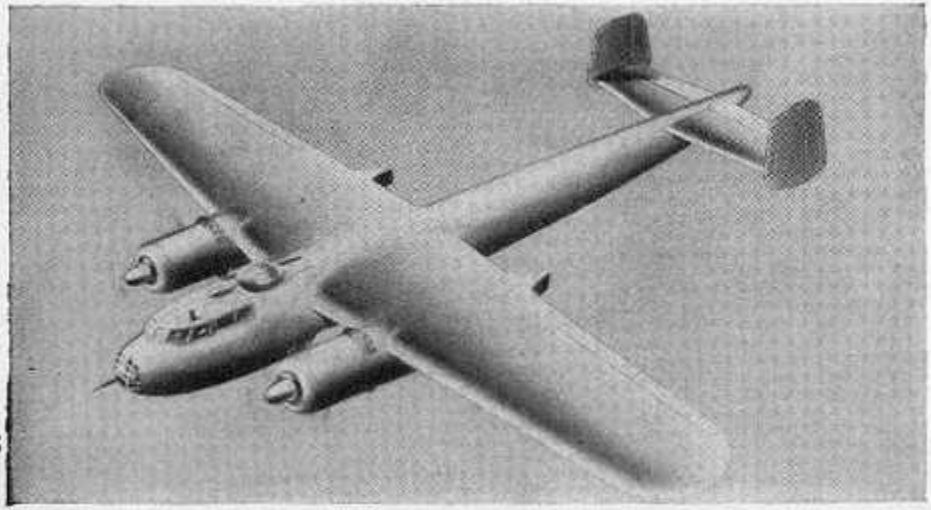
RESTRICTED



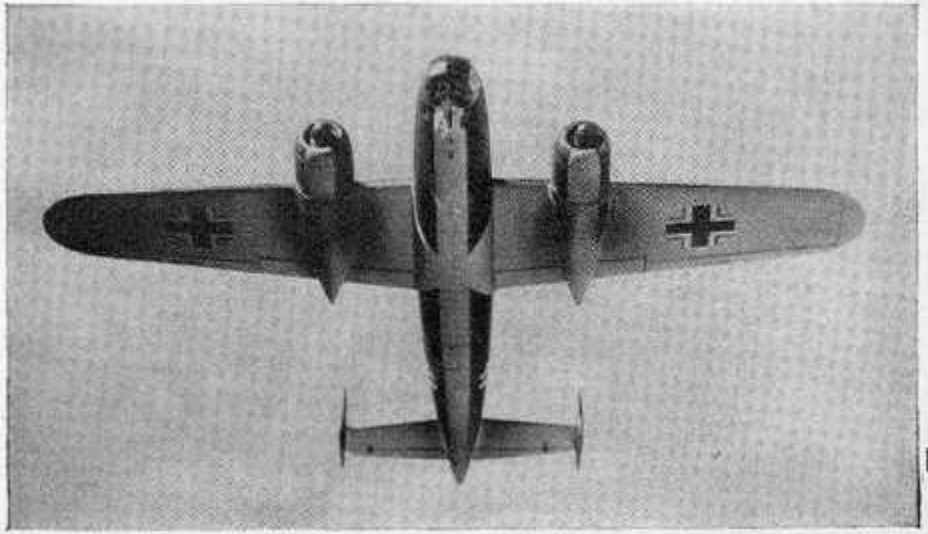
A



C



B

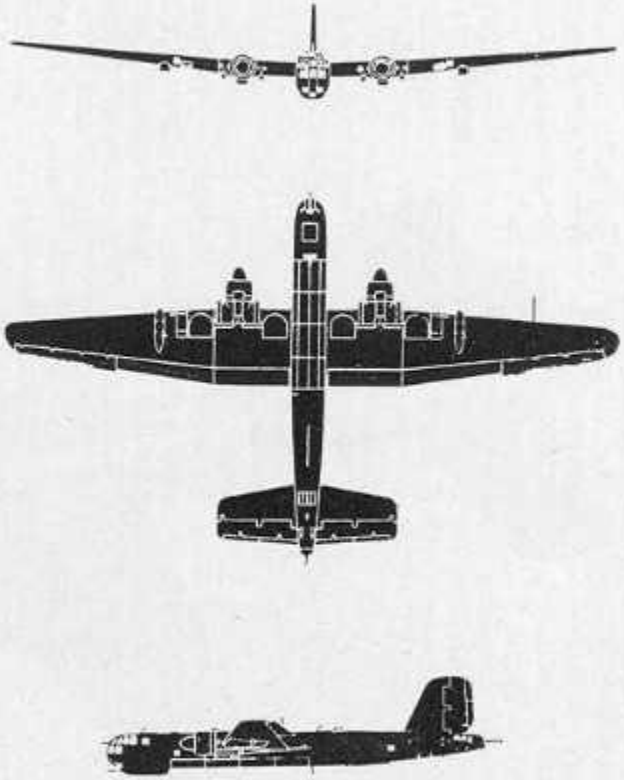


D

HEAVY BOMBER

REICH

HEINKEL "HE. 177"



HE 177
HEINKEL
GERMANY

DISTINGUISHING FEATURES: Mid-wing monoplane with two engines in radial type nacelles. Wing has straight center section with no dihedral. Outer panels tapered with elliptical tips and dihedral. Long, rectangular-shaped fuselage. Long nose with gondola beneath. Very large angular tail unit.

INTEREST: The prototype of the He 177 was first reported in 1940. Although the He 177 is technically a four-engine aircraft, it appears as a twin-engine aircraft. Each nacelle houses two liquid-cooled engines driving a single propeller. The engines are reported to be clutch connected enabling one engine of each pair to be disengaged. The He 177 has been used chiefly for long range bomber-reconnaissance against Allied convoys. They have also been reported over southeast England in small numbers.

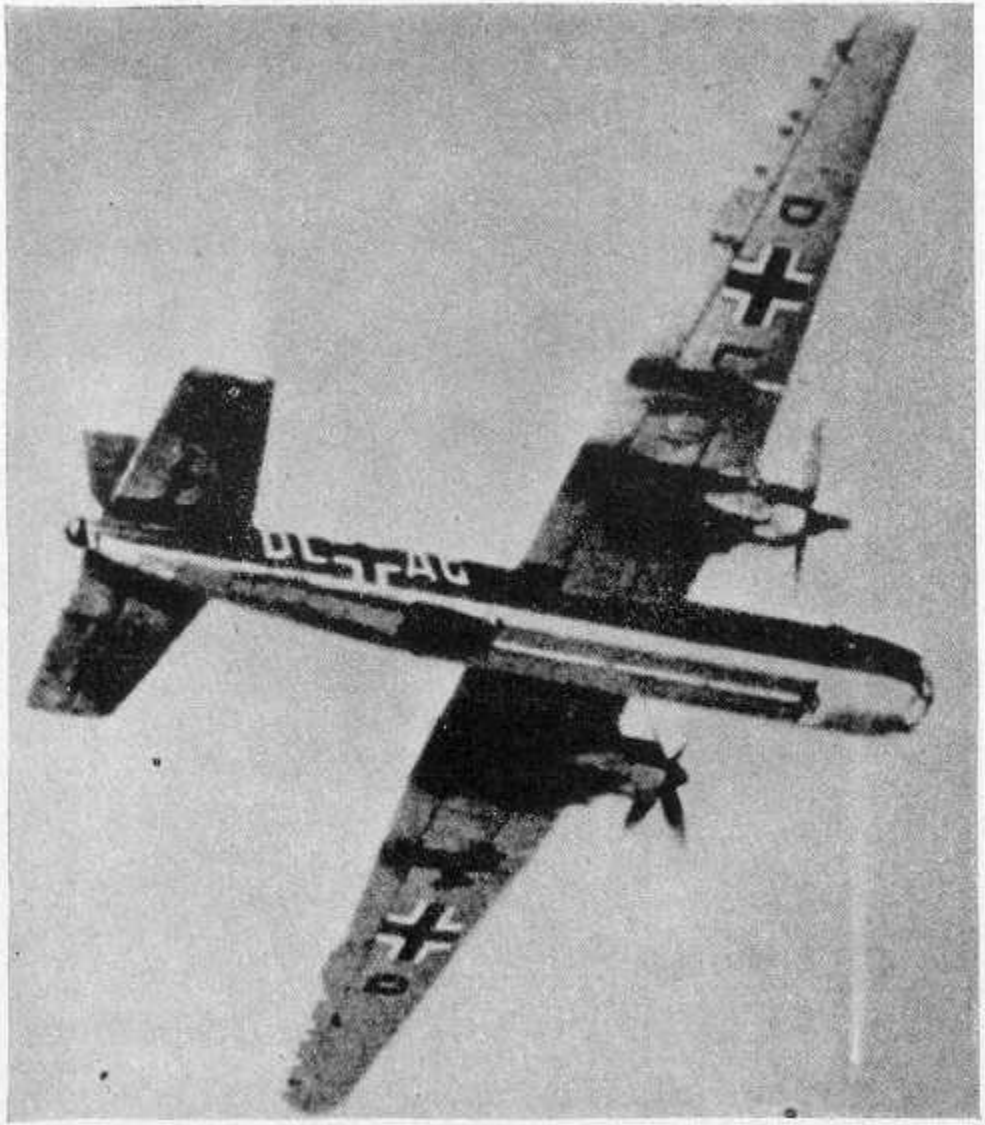
SPAN: 103 ft. 6 in.
LENGTH: 67 ft. 5 in.
MAX. SPEED: 305 m.p.h. at 20,000 ft.
SERVICE CEILING: 32,000 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

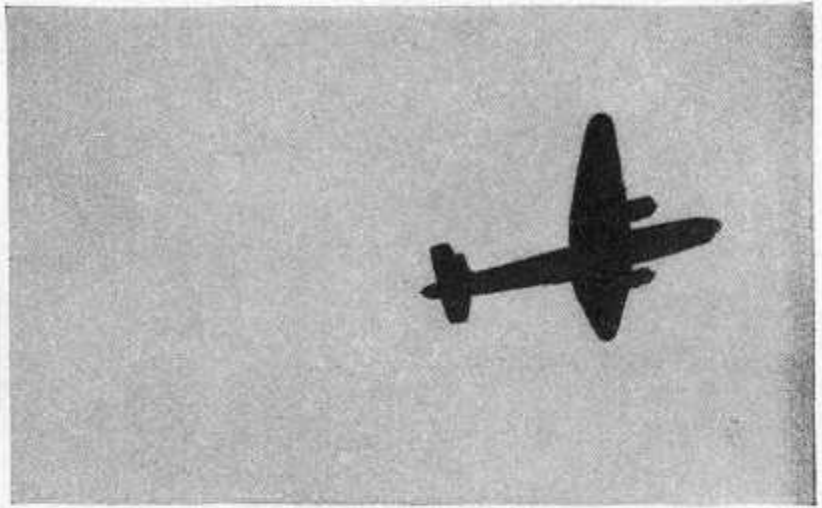
SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

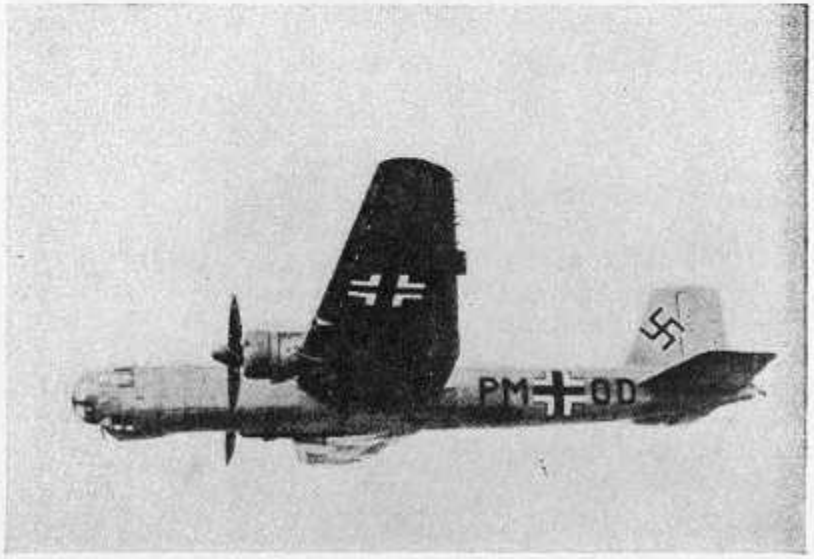
RESTRICTED

A



B



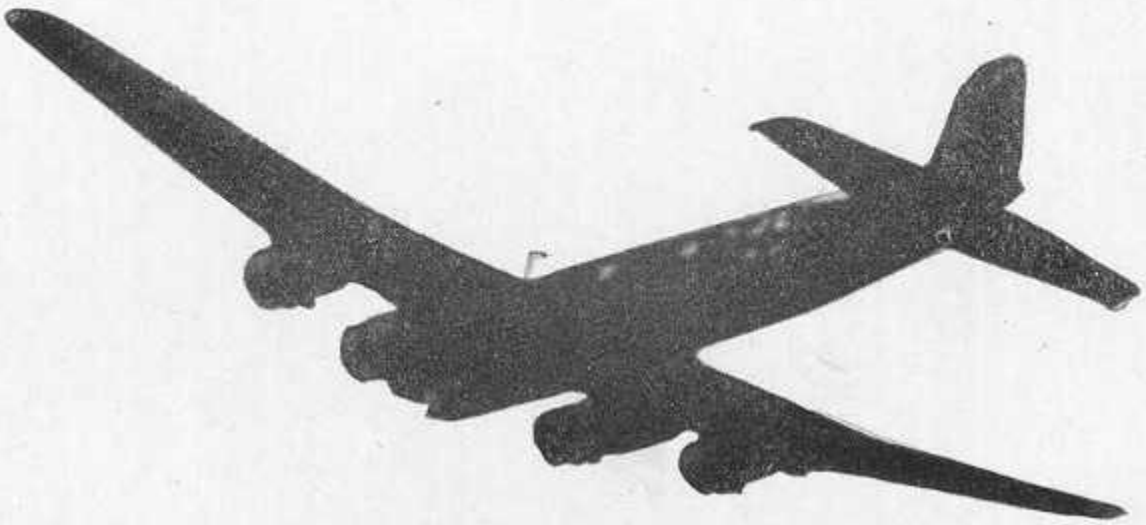


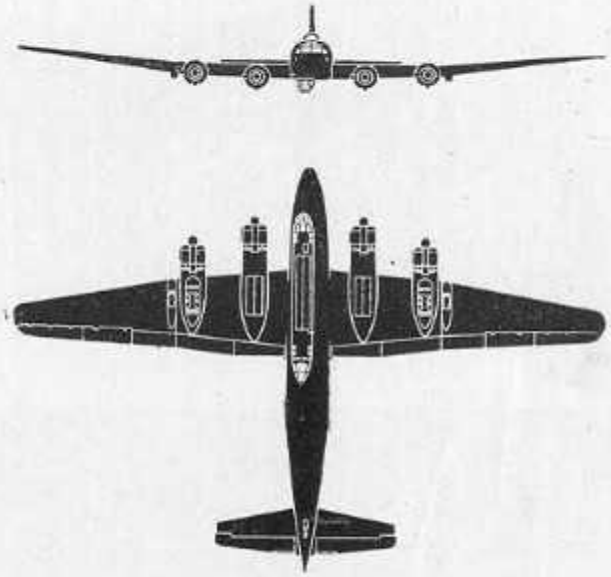
C

HEAVY BOMBER

REICH

FOCKE WULF "F.W. 200"





FW 200C
FOCKE WULF
GERMANY

DISTINGUISHING FEATURES: Low-wing monoplane with four radial engines. Long tapered wing with dihedral in outer section and rounded tips. Long, squat fuselage with pointed nose and long offset gondola beneath. Tapered tail surfaces with blunt tips.

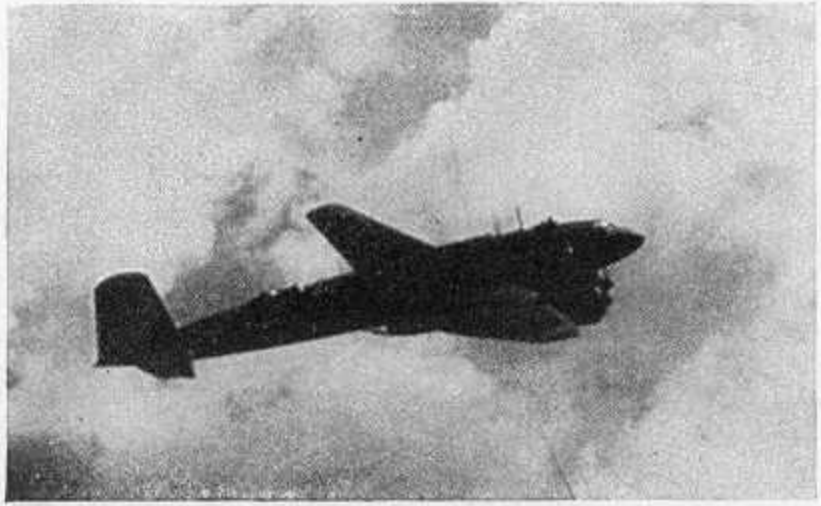
INTEREST: The FW 200 was developed from the original Kondor civil transport which was first produced in 1937. The FW 200 or "Kurier" has been the principal anti-shipping aircraft used by the Germans, attacking ships and spotting convoys in cooperation with U-boats. It has been used for long-range reconnaissance over Iceland and northern Greenland, and has been used as a torpedo-bomber against Russia bound convoys. Among its duties has been mine-laying.

SPAN: 107 ft. 7 in.
LENGTH: 78 ft. 2 in.
MAX. SPEED: 240 m.p.h. at 13,000 ft.
SERVICE CEILING: 28,000 ft.

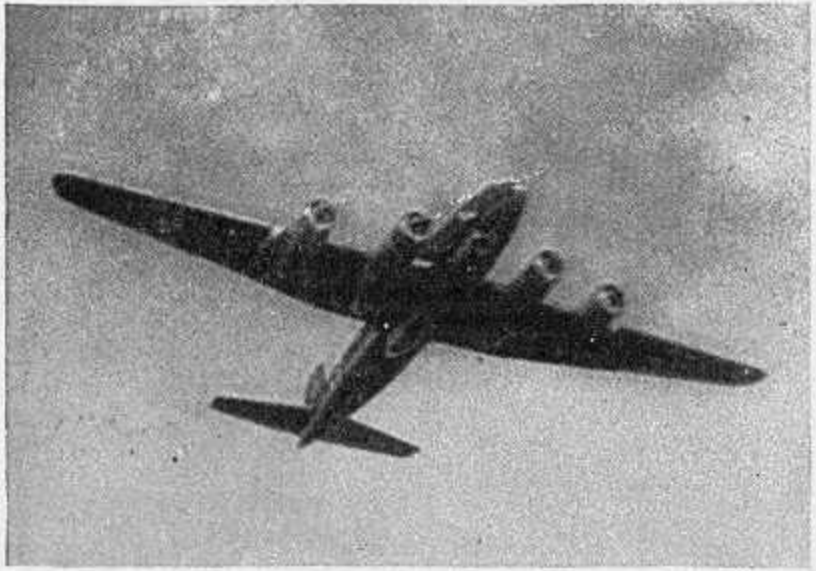
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

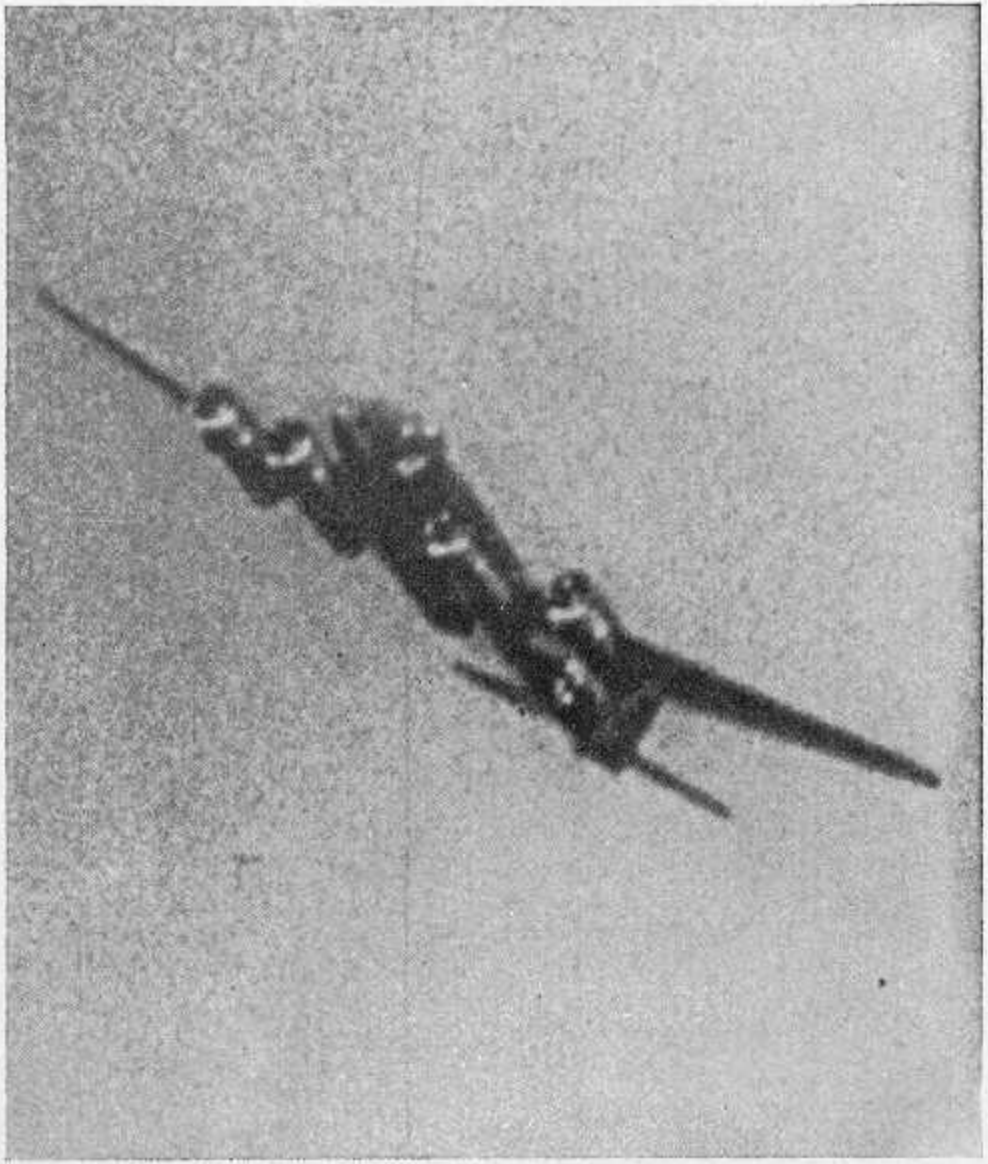
RESTRICTED



A



B

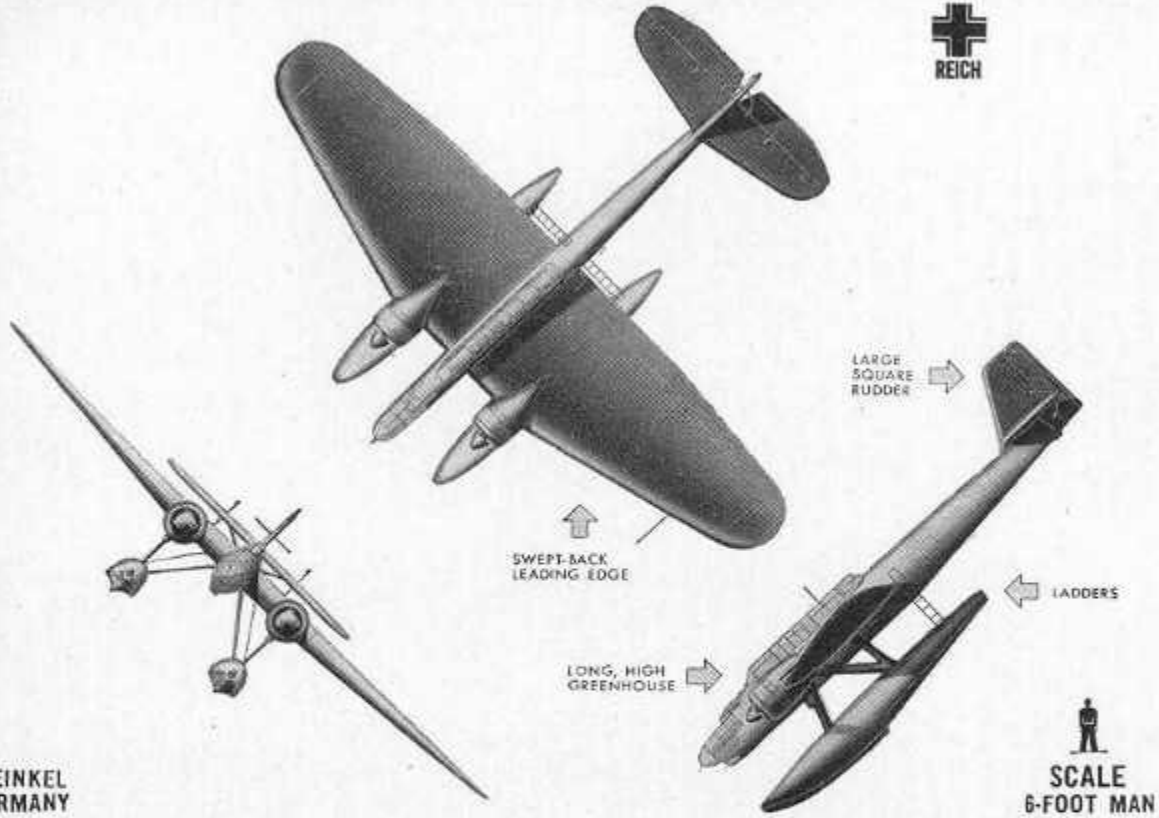


C

GERMANY: He. 115K

TORPEDO BOMBER—RECONNAISSANCE

REICH



HEINKEL
GERMANY

SCALE
6-FOOT MAN

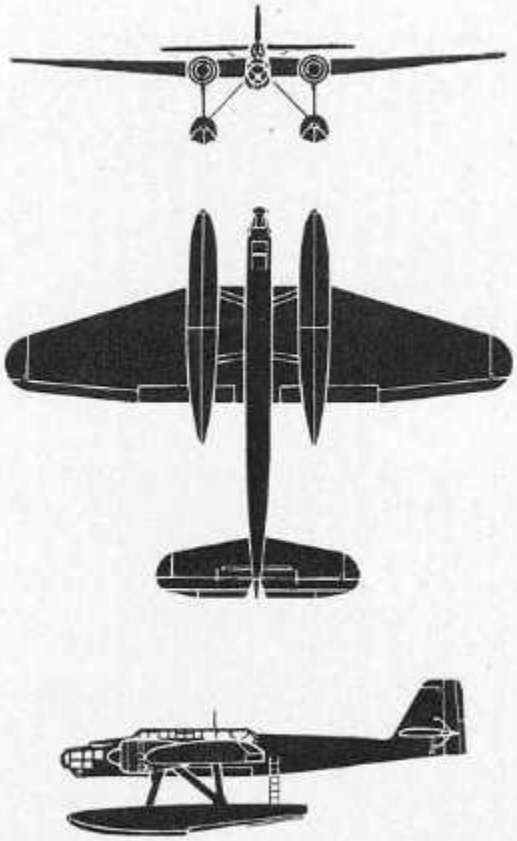
DISTINGUISHING FEATURES: Twin-engined, mid-wing monoplane with twin floats. Wings have pronounced taper on leading edge and rounded tips. Twin radial engines in wings above floats. Long slim fuselage with long cockpit enclosure and transparent nose. Tall angular single fin and rudder. Stabilizer has tapered leading edge, curved tips; elevators have "V" cut-out.

INTEREST: The He 115 has undergone many revisions since it first flew as a mail plane in 1937. The He 115 K–2, which appeared in 1939, is used for torpedo dropping, mine laying, and long range overseas reconnaissance. It was the first plane to lay the widely publicized German magnetic mine, and can be equipped also for laying smoke screens and spraying gas. By reinforcing the floats, this aircraft has been operated from snow-covered airdromes, and floats can be equipped with "skates" for landing on ice. One interesting feature of the He 115 is the installation of the fixed machine guns, one in the rear of each engine nacelle, firing aft.

APRIL, 1941
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 5

HEINKEL "HE. 115"



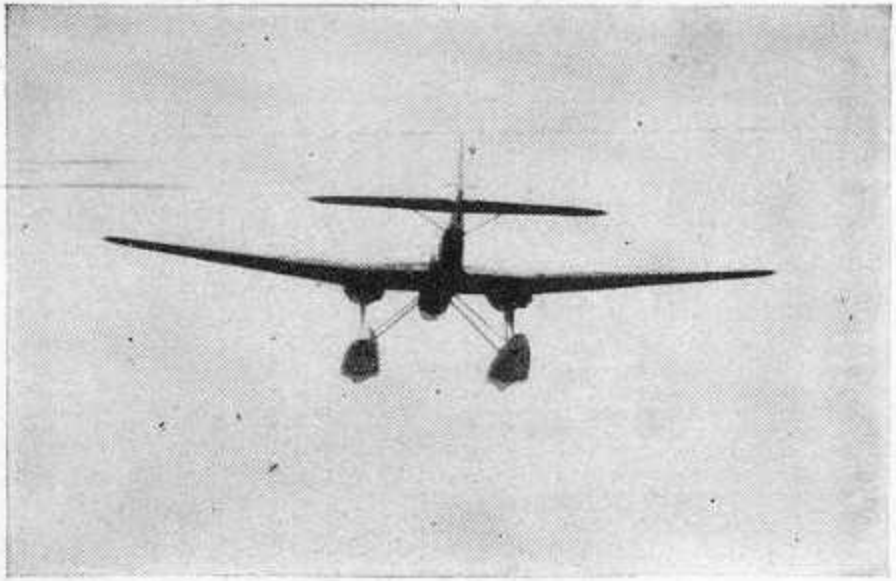
SPAN: 72 ft. 10 in.
LENGTH: 56 ft. 8 in.

SERVICE CEILING:
27,000 ft. (not loaded)
18,500 ft. (with load)

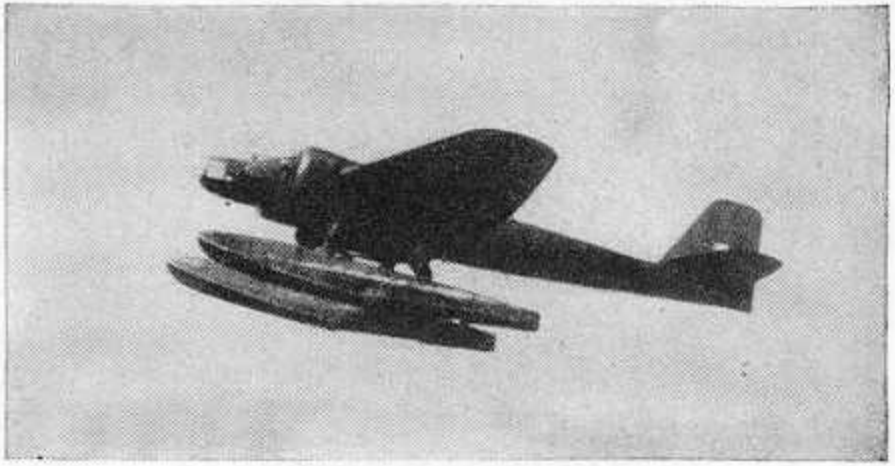
MAX. SPEED: 206 m. p. h. at 11,500 ft.

RESTRICTED

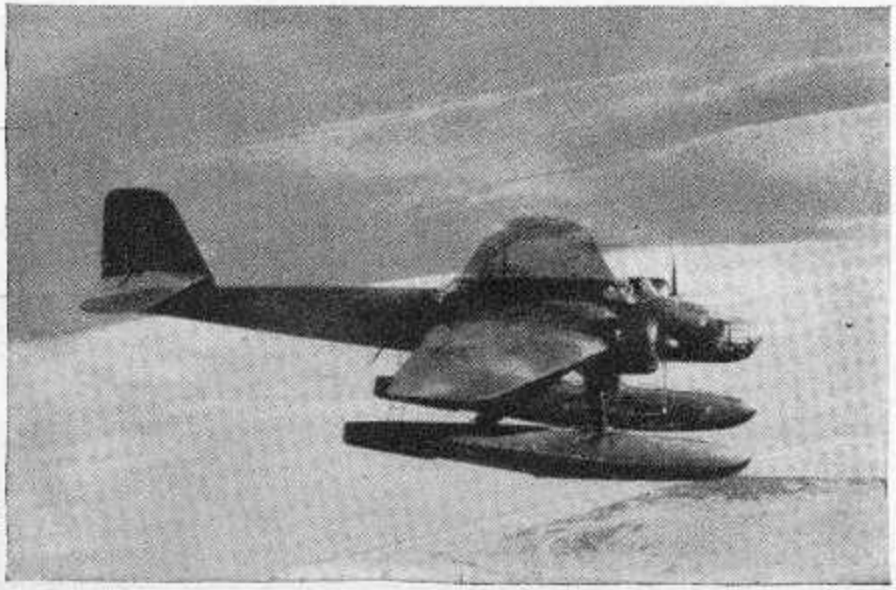
A



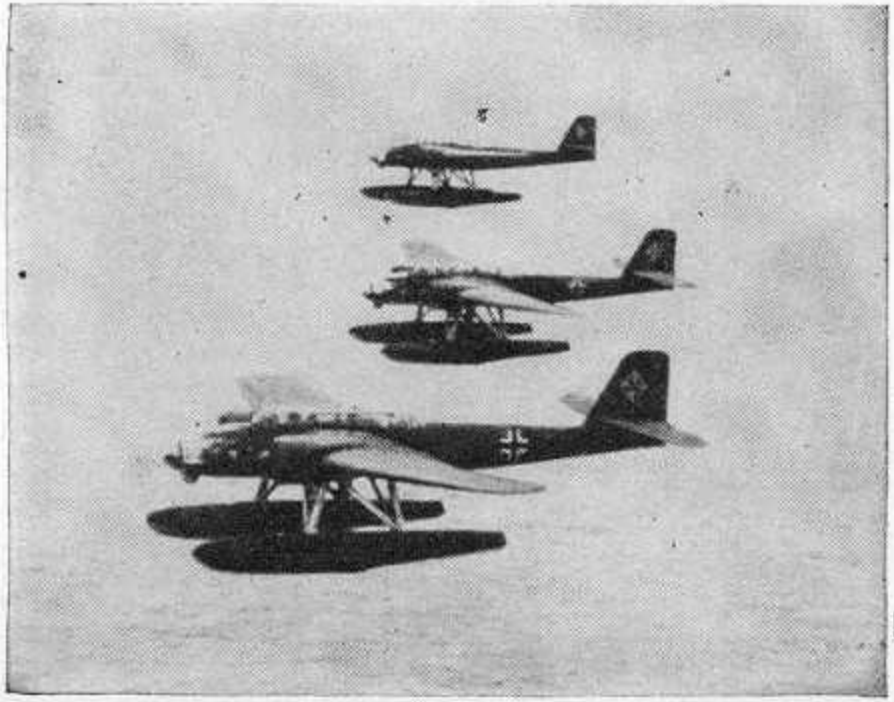
C



B



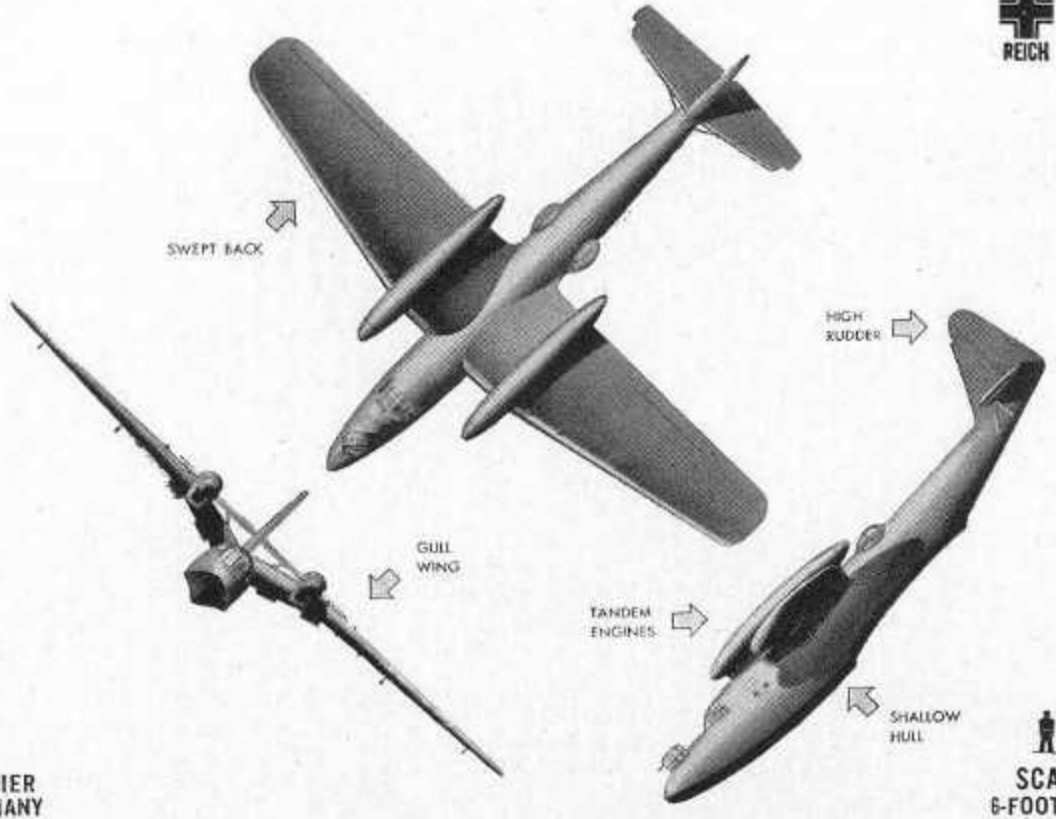
D

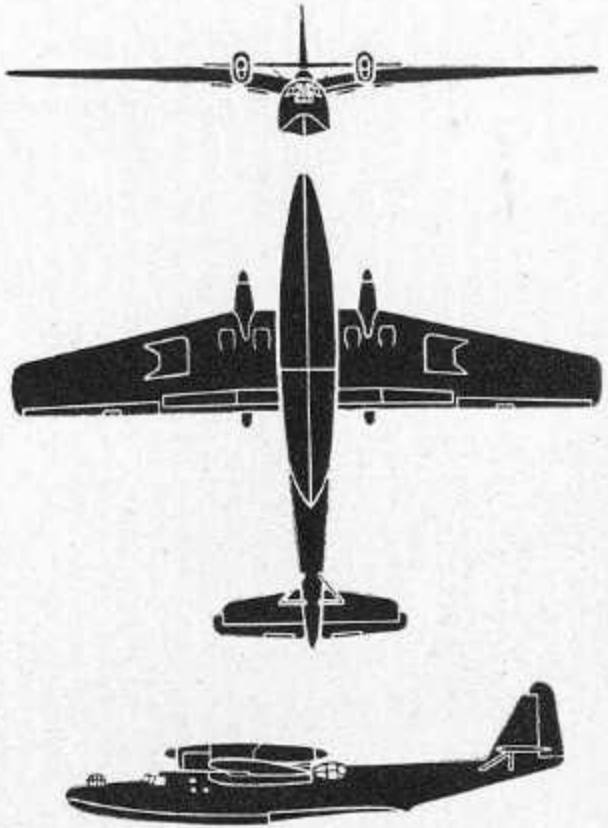


PATROL BOMBER

REICH

DORNIER "DO. 26"





DORNIER
GERMANY

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Four in-line engines in tandem pairs, propellers fore and aft. Engines are mounted on top of wings. High gull wing with tapered leading edge, straight trailing edge and blunt tips. Long flying boat hull. High triangular fin and rudder. Stabilizer and elevator set high.

INTEREST: The DO-26 is the only four-engined liquid-cooled flying boat which is ranked as a first-line plane. For recognition purposes, this aircraft is to be considered as a two-engined airplane since it has only two nacelles, the four Diesel engines being mounted in tandem. It is a militarized version of an aircraft which was originally designed for Trans-Atlantic Mail Service, but completed too late for use. Its estimated range is approximately 3,470 miles. In spite of its weight (44,000 lbs.), the Germans launch the DO-26 from catapults. Its wing floats retract inward into the wings.

SPAN: 98 ft. 6 in.
LENGTH: 80 ft. 6 in.
MAX. SPEED: 200 m. p. h.

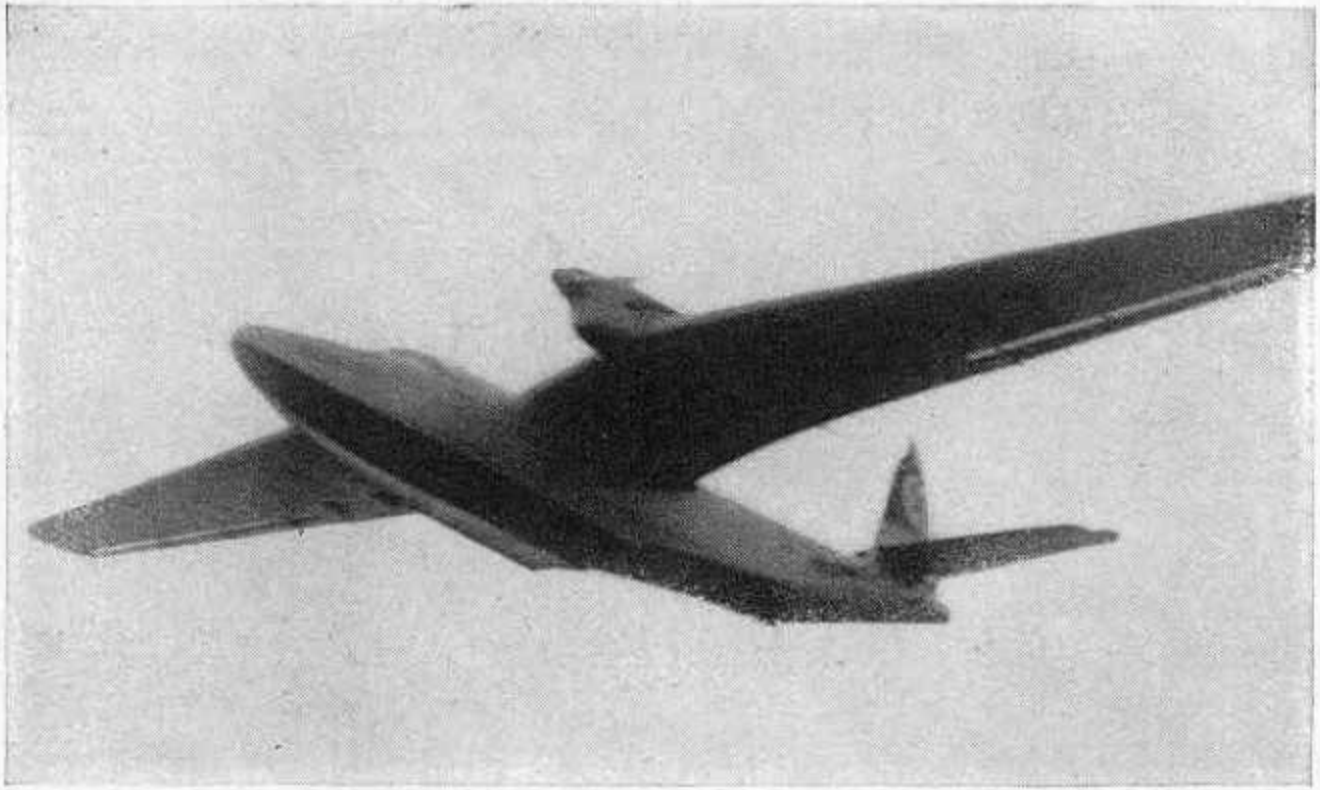
SERVICE CEILING:
16,000 ft.

RESTRICTED

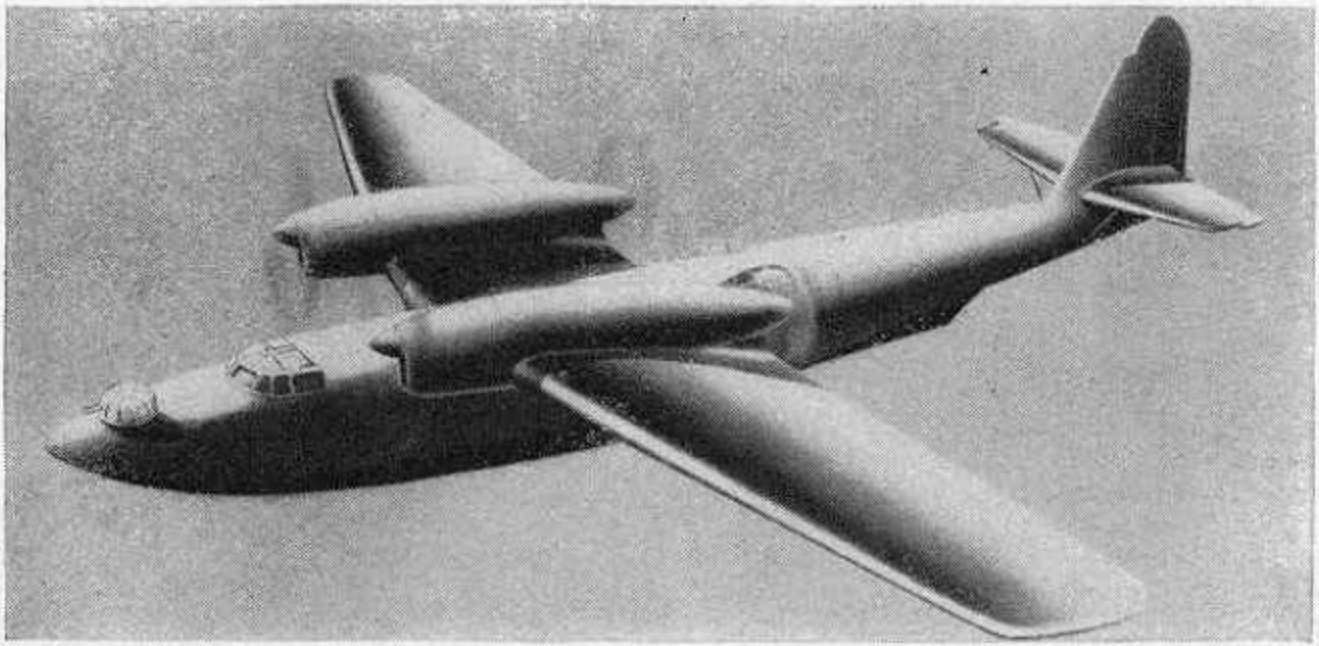
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

A



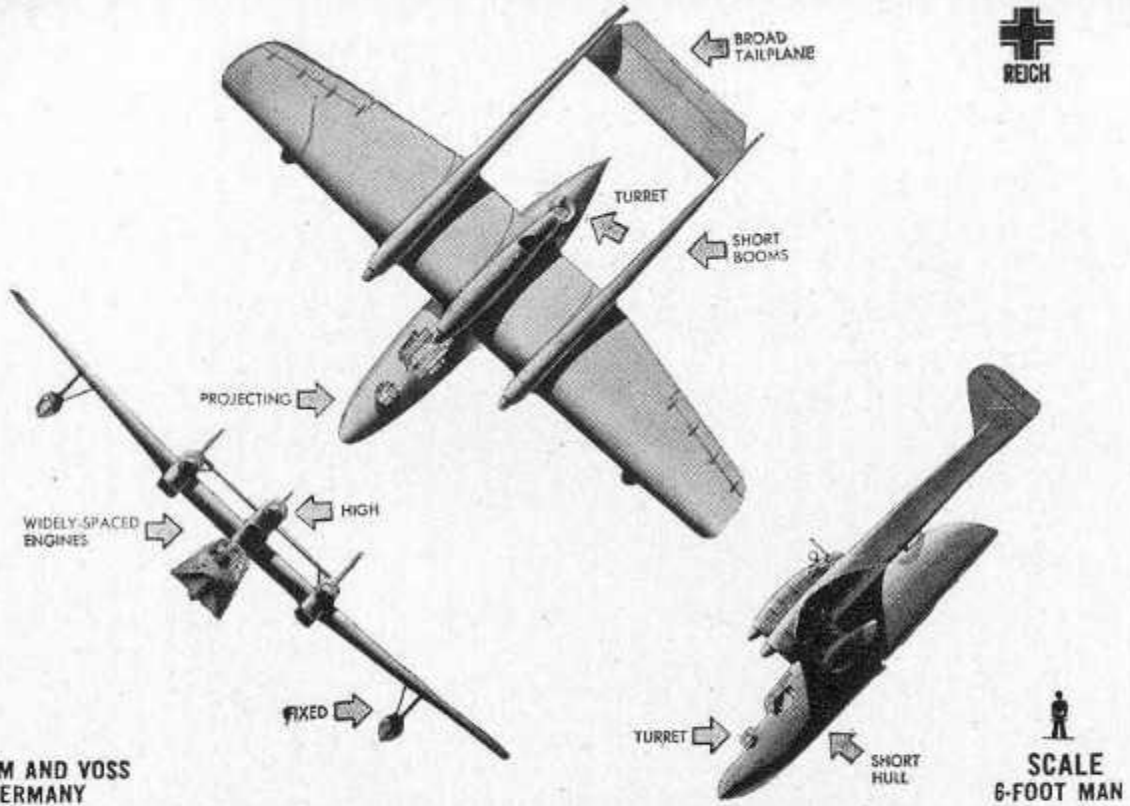
B



PATROL BOMBER

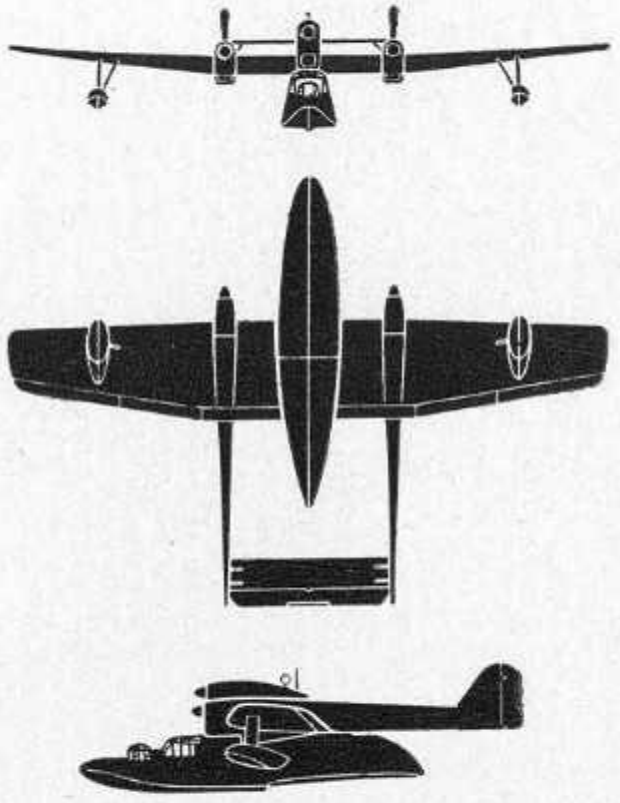
REICH

BLOHM & VOSS "HA. 138"



BLOHM AND VOSS
GERMANY

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: High-wing monoplane with three in-line engines. Hull has single step and projects well in front of wings. Wings are tapered slightly on outer sections with raking tips. Fixed wing floats. Engines mounted on top of wing, the center one being noticeably higher. Nacelles of outboard engines extend to form twin tail booms ending in twin fins and rudders, with marked taper on leading edges. Rectangular stabilizers set between booms.

INTEREST: Used for general reconnaissance work and bombing, this flying boat carries a crew of five or six. A slow ship, common fault of all flying boats, this plane cruises at 152 m. p. h. with a 1,000 pound bomb load, and has a range of 1,425 miles. One of the older type German flying boats, the BV 138 is used primarily for observation reconnaissance over sea areas. An unusual feature is that some sub-types are fitted with a power operated gun turret in the nose, mounting a 15-mm gun.

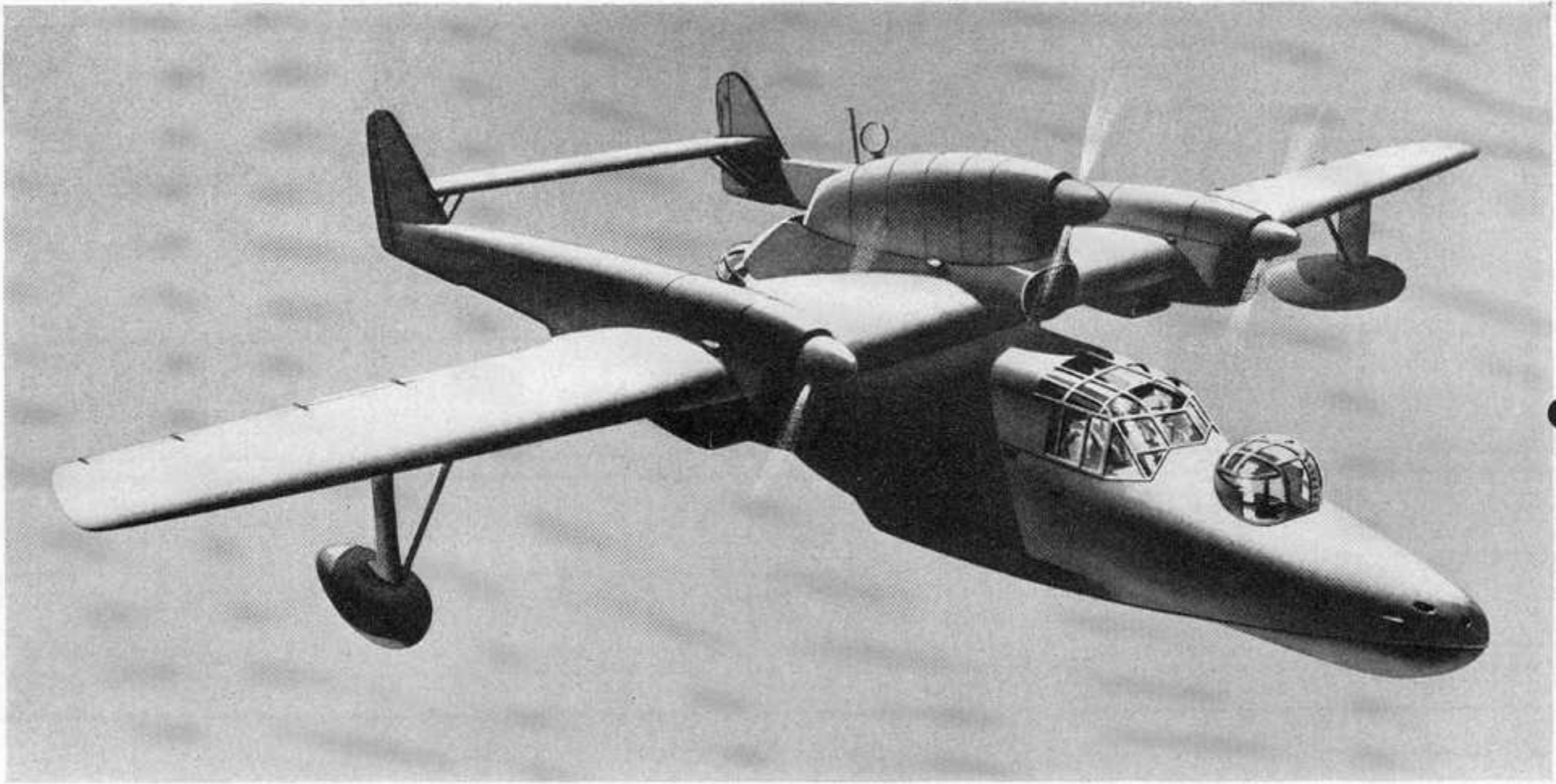
SPAN: 88 ft. 7 in.
LENGTH: 65 ft. 5 in.
MAX. SPEED: 170 m. p. h. at sea level
SERVICE CEILING: 18,000 ft. (normal load)

RESTRICTED

APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 2

A



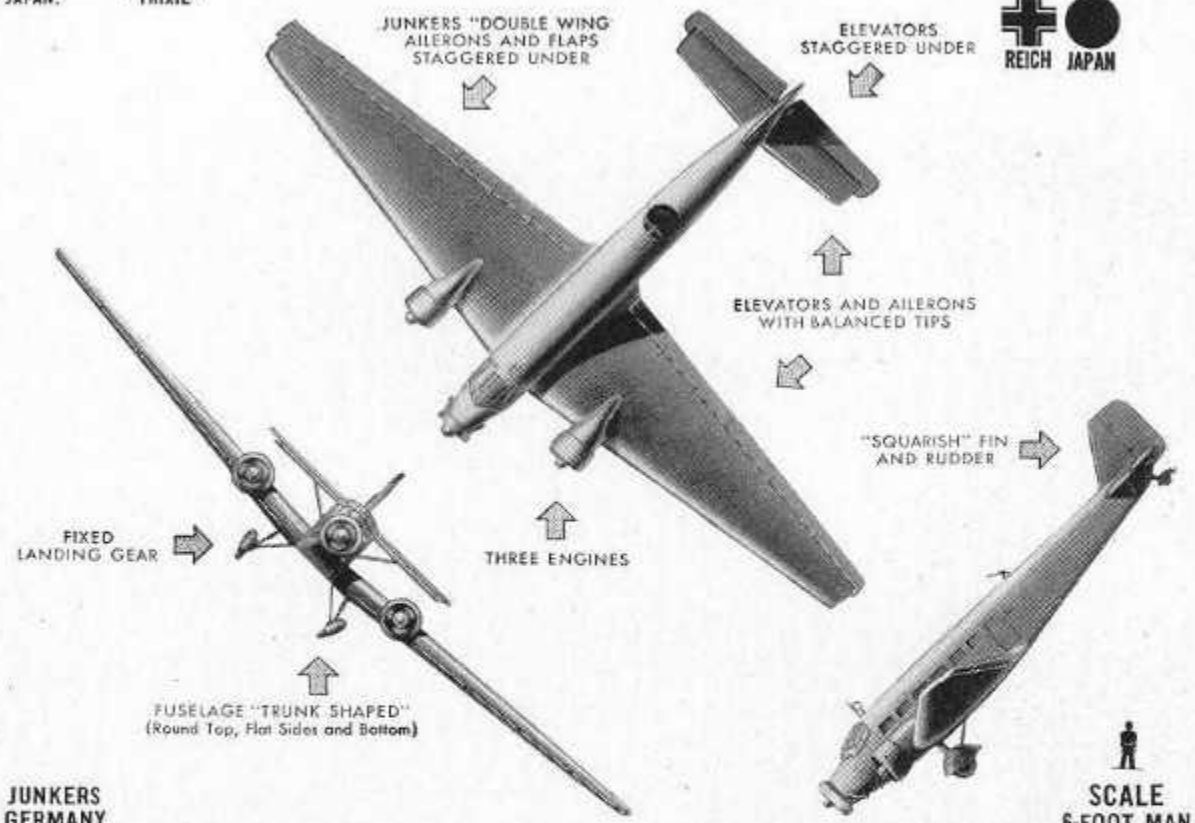
GERMANY: Ju. 52

JAPAN: "TRIXIE"

TRANSPORT—GLIDER TUG

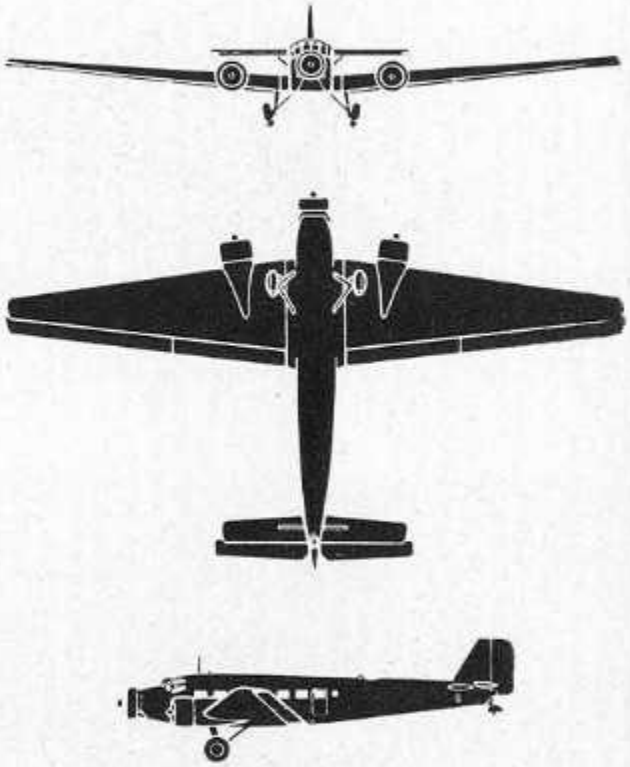
REICH JAPAN

JUNKERS "JU. 52"



JUNKERS
GERMANY

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Low-wing three-engined monoplane. Wing has equal taper on both edges with square tips. Outer engines diverge slightly. Note Junkers "Double-wing" construction. Fixed landing gear. Heavy fuselage. Large angular fin and rudder and wide angular stabilizer.

INTEREST: The most widely used German transport plane, the Ju 52, although old-fashioned in design, is one of the most efficient troop and cargo carriers in operation. The Germans used it for carrying paratroops in their invasion of Holland, Norway, and Crete. More recently it has played a prominent part in carrying reinforcements to the German garrisons in Tunis. It also serves as a glider tug. In troop transport work these planes carry from 14 to 20 men, with equipment; as a paratroop transport, it can accommodate from 10 to 14 men. A seaplane version is identical apart from having twin pontoons.

SPAN: 96 ft.
LENGTH: 62 ft.

SERVICE CEILING:
21,000 ft. (without load)
16,000 ft. (max. load)

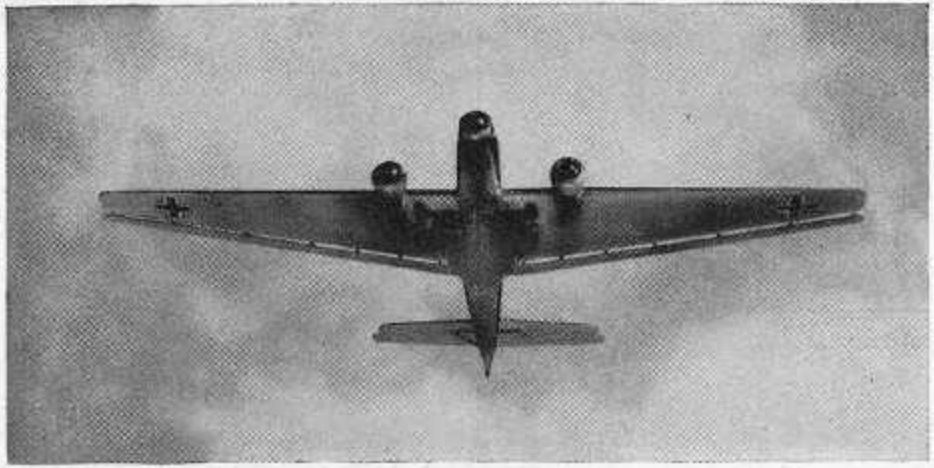
MAX. SPEED: 165 m. p. h. at sea level

RESTRICTED

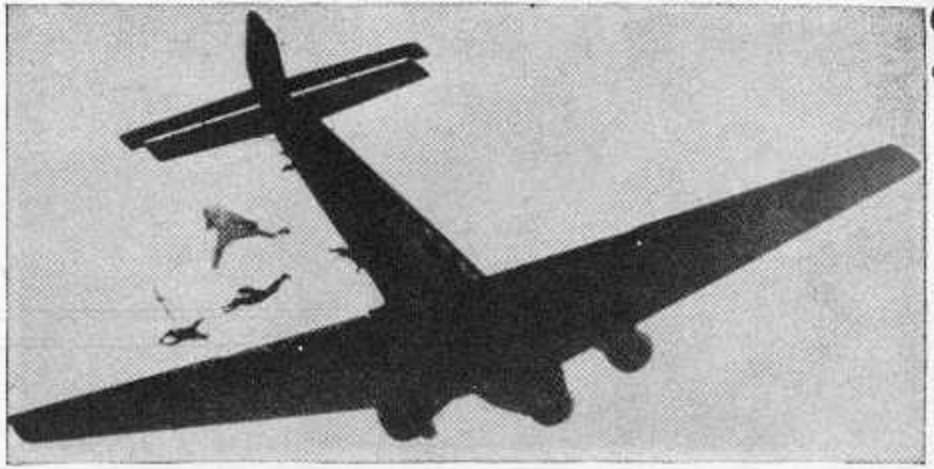
APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

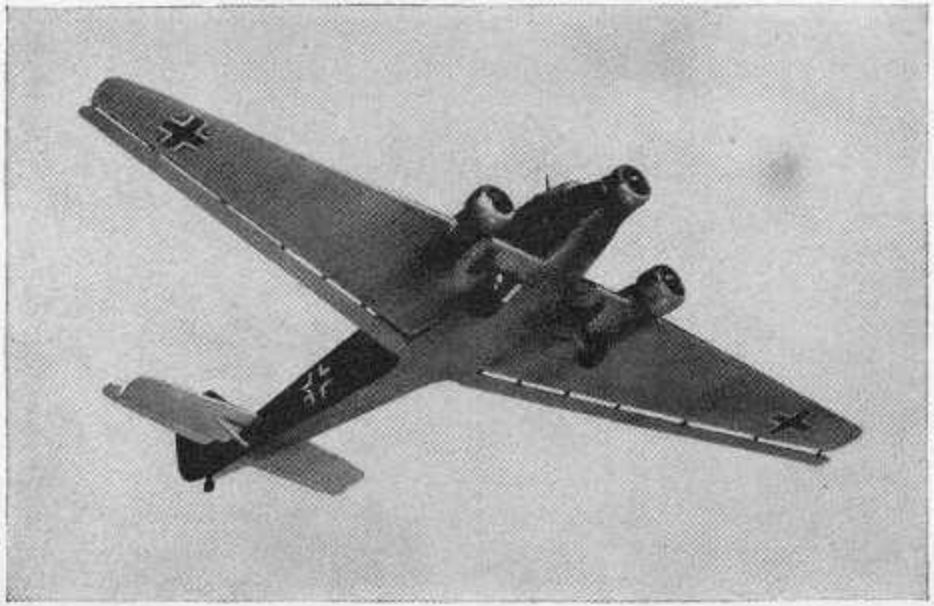
A



C



B

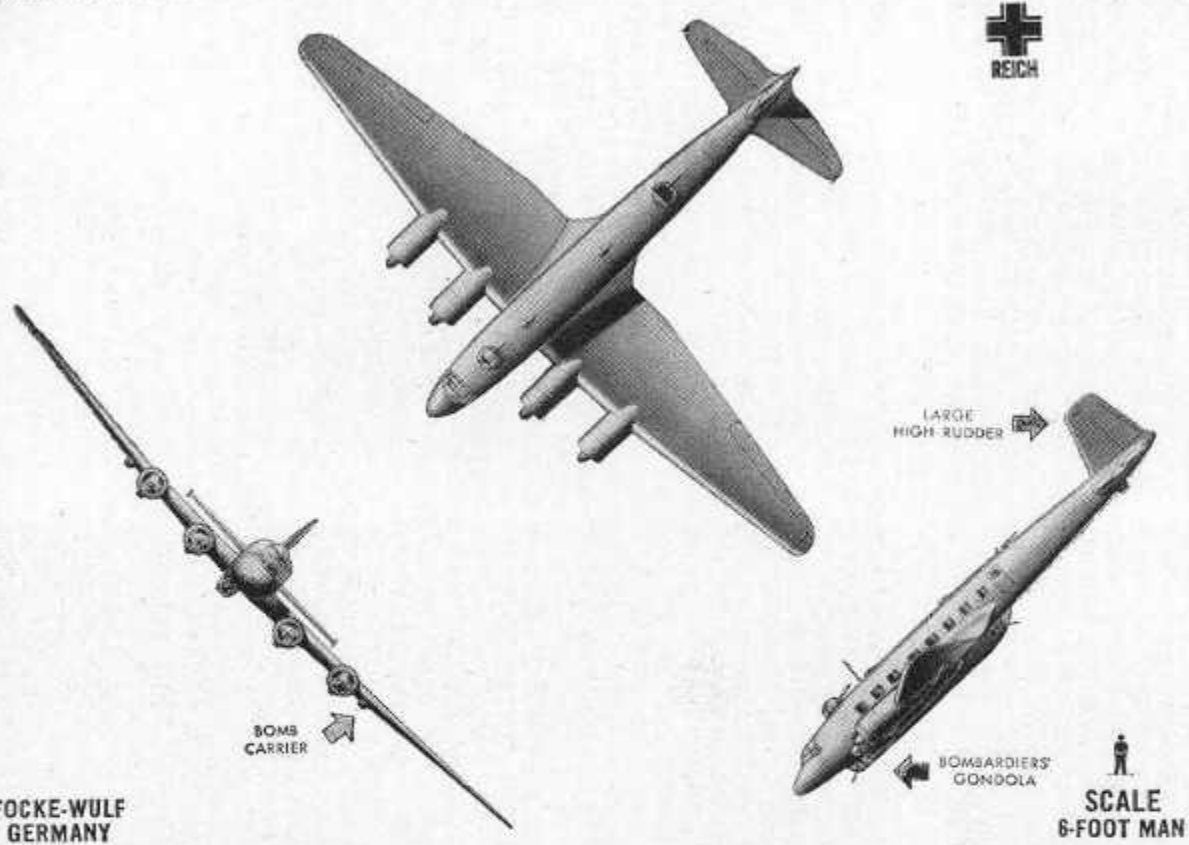


D

GERMANY: F. W. 200K

HEAVY BOMBER—TRANSPORT

REICH



FOCKE-WULF
GERMANY

SCALE
6-FOOT MAN

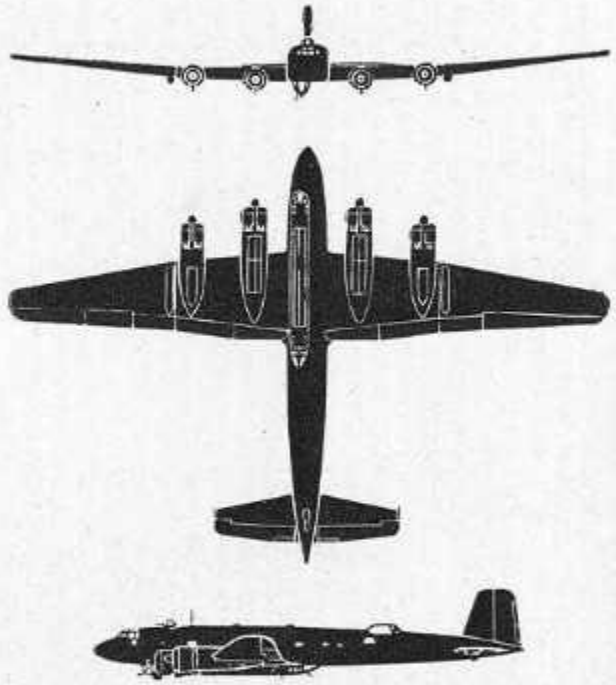
DISTINGUISHING FEATURES: Low-wing monoplane with four radial engines. Tapered wing has wide span and small round tips. Fuselage is long and tapering with long offset bomb compartment on under side. Large fin and rudder with blunt top. Tapered stabilizer and elevators have rounded tips.

INTEREST: Used extensively over the North Atlantic, this 6-place bomber carries out long-range reconnaissance, mine-laying, and convoy attacks. Against Russian-bound convoys, it has been used as a torpedo plane. Known as the "Kurier," this aircraft is a military adaptation of the "Condor," a civil transport, and this accounts for the addition of the long off-center bomb compartment under the fuselage. German submarine "Wolf Packs" are frequently in radio communication with the "Kuriers," which inform them of the courses and location of Allied convoys.

APRIL 1941
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

FOCKE-WULF "F.W. 200"



SPAN: 108 ft.
LENGTH: 78 ft.

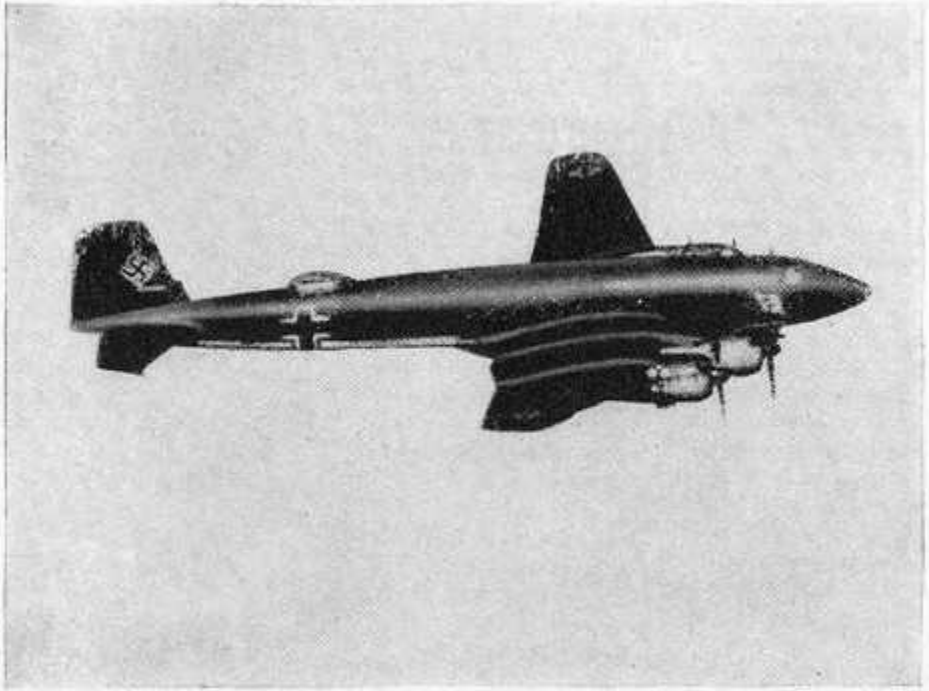
SERVICE CEILING:
30,000 ft. (not loaded)
21,500 ft. (fully loaded)

MAX. SPEED: 235 m. p. h. at 13,000 ft. (loaded)
250 m. p. h. at 13,000 ft. (bombs unloaded)

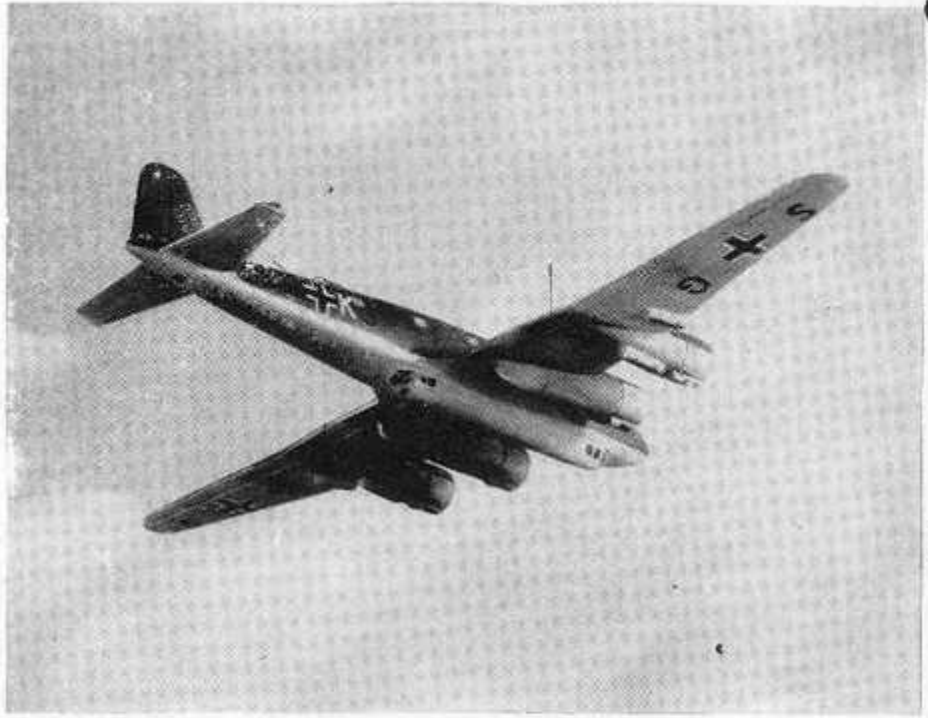
RESTRICTED

A

B



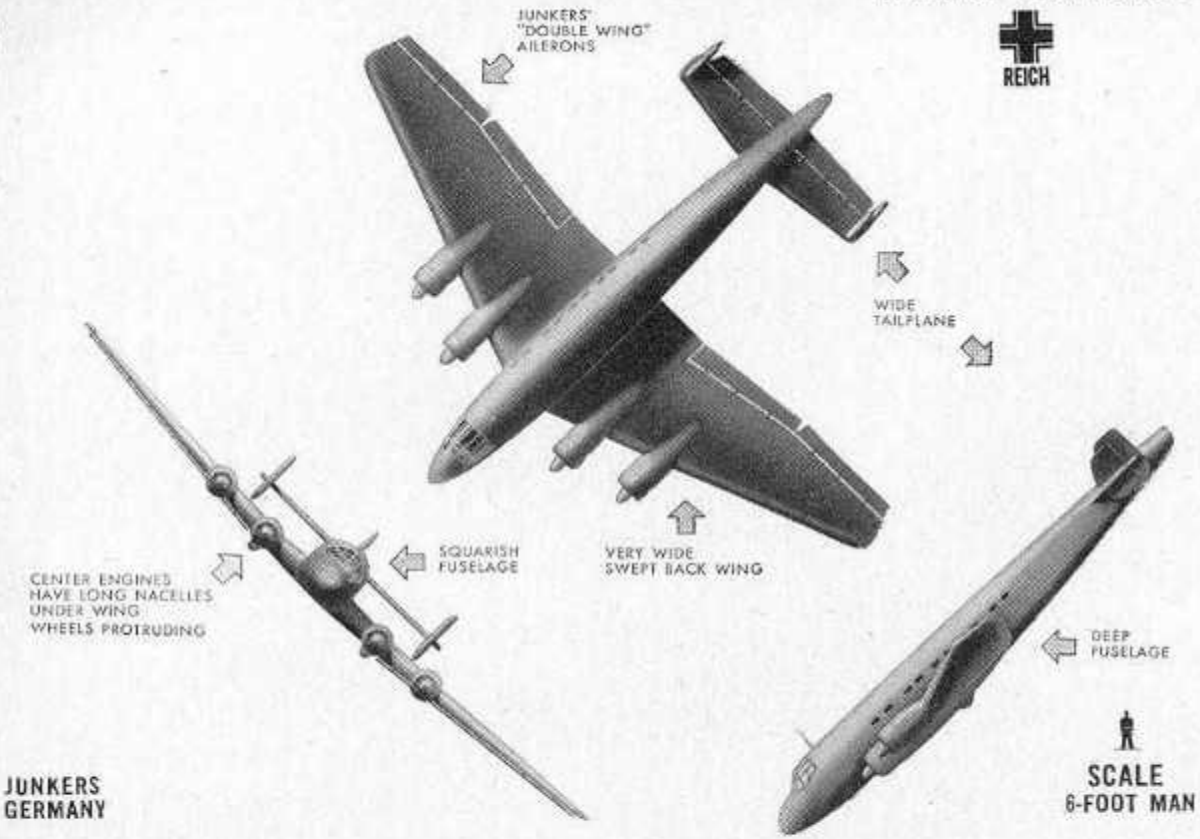
C



D

TRANSPORT—HEAVY BOMBER

REICH

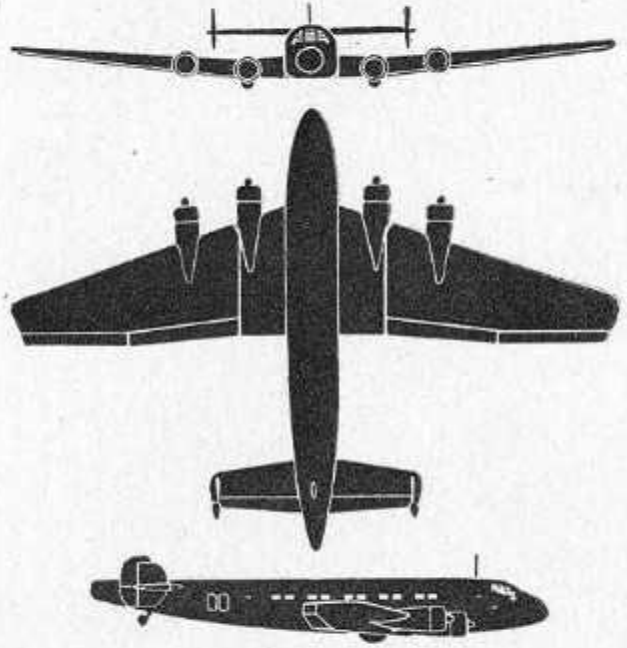


JUNKERS "JU. 90"

JUNKERS
GERMANY

DISTINGUISHING FEATURES: Low-wing monoplane with four engines (radial or in-line). Wings are broad and decidedly swept-back with raked tips and fitted with typical Junkers "double wing" ailerons and flaps. Engine nacelles are staggered. Fuselage is broad and long with ventral line swept up to tail. Stabilizer set forward and high with equal taper on both edges. Twin fins and rudders set outboard of stabilizer.

INTEREST: Formerly Germany's largest land plane. This transport carries a crew of five and accommodates forty soldiers. A larger type of Junkers transport, known as the Ju. 290, is coming into limited use. The maximum range of this aircraft is 1,960 miles at 200 miles per hour. In addition to troop carrying and glider towing, the Ju. 90 can be pressed into service as a bomber, provision being made for stowage of a maximum bomb load of 7,700 pounds. The model having in-line engines is referred to as the "New Ju. 90."



SPAN: 115 ft. 6 in.
LENGTH: 85 ft.

SERVICE CEILING:
radial engines, 15,000 ft.
in-line engines, 24,000 ft.

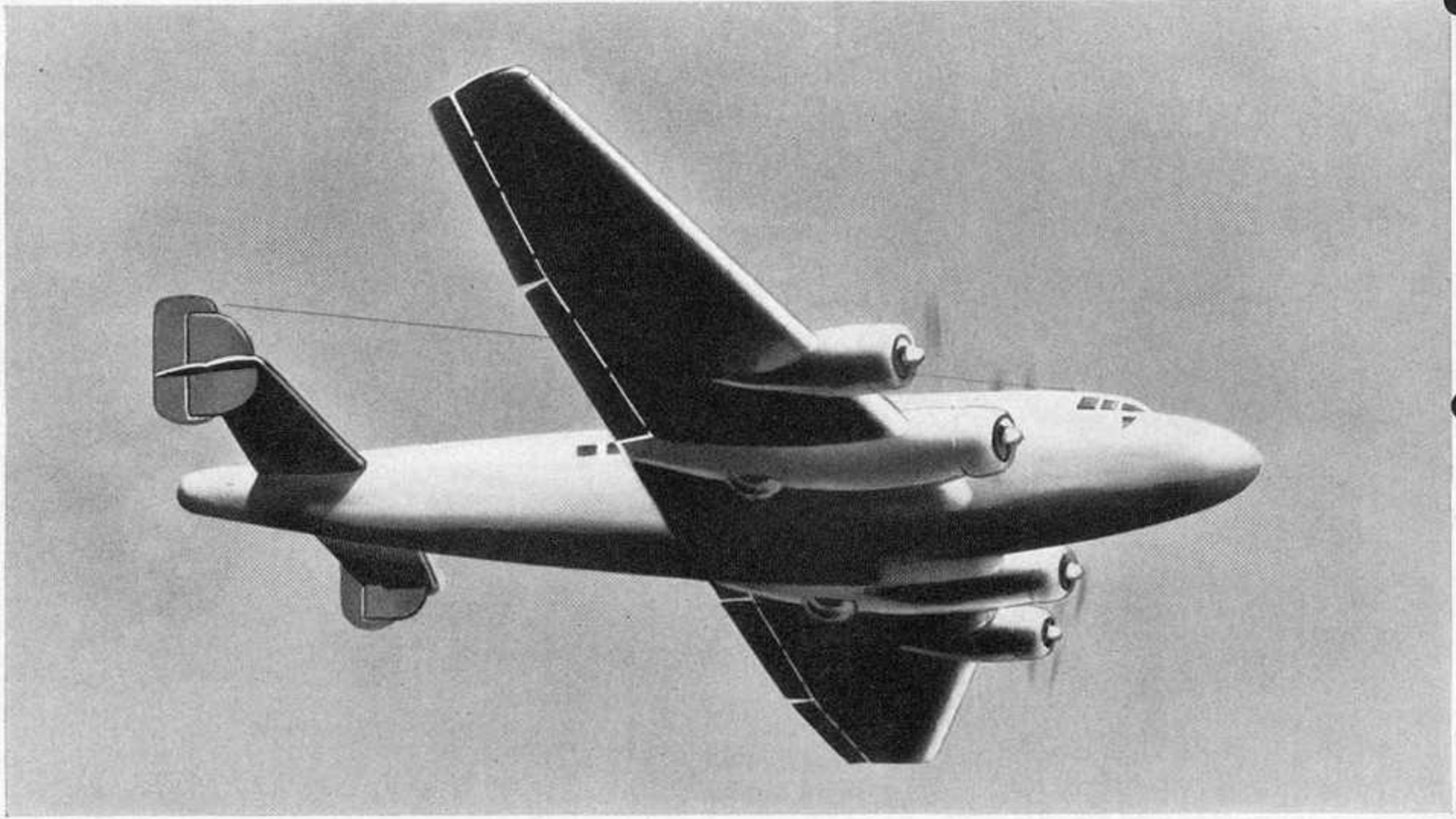
MAX. SPEED: radial engines, 218 m. p. h. at 3,500 ft.
in-line engines, 260 m. p. h. at 15,000 ft.

RESTRICTED

APRIL 1942
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

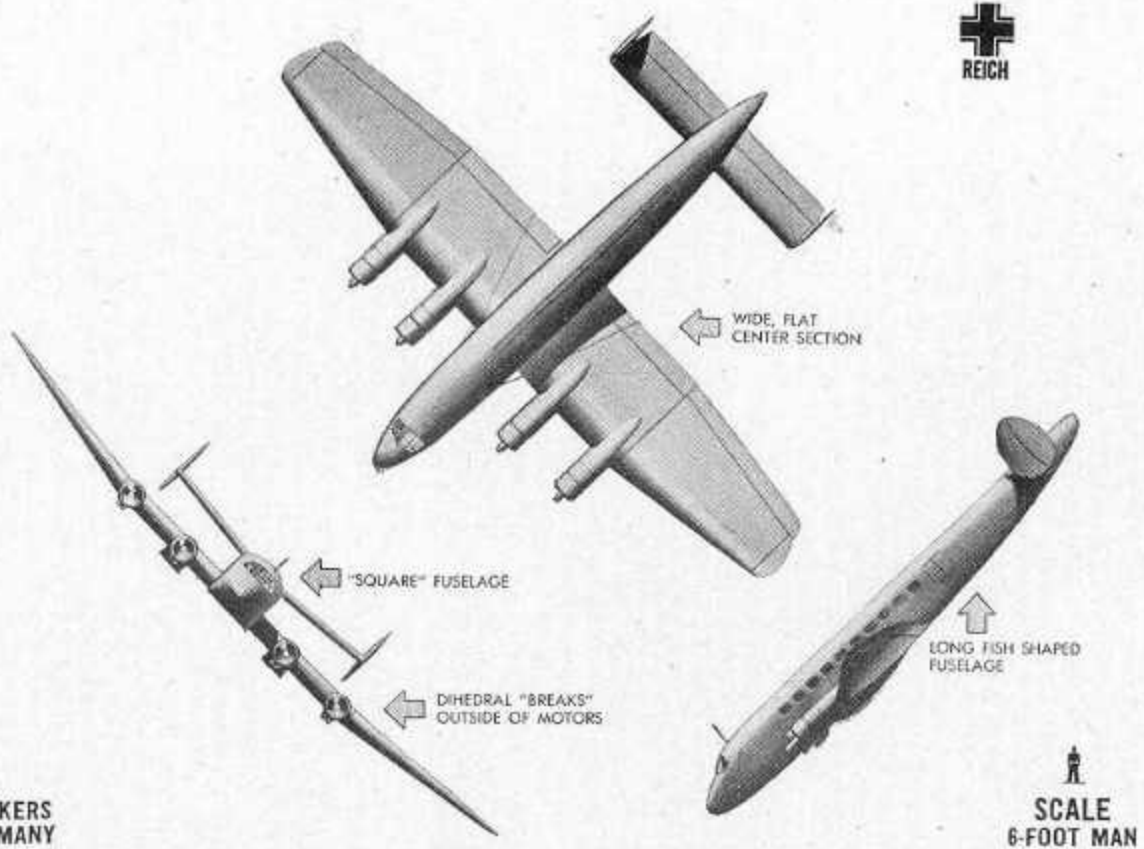
A



TRANSPORT—HEAVY BOMBER

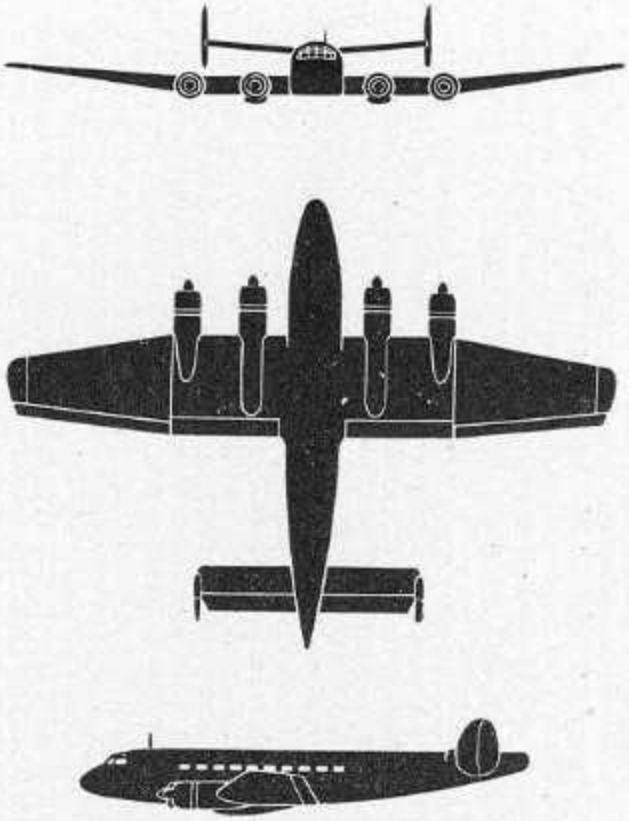
REICH

JUNKERS "JU. 290"



JUNKERS
GERMANY

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Low-wing monoplane with four sharply projecting radial engines. Wing has rectangular center section with equally tapered outer section and raking tips. Wing is nearly amidships of heavy fuselage which has horizontal dorsal and curving ventral line and a cross section which is flat underneath and rounded above. Twin fins and rudders are an oval in form and are set outboard of rectangular stabilizer which is set high and forward and has pronounced dihedral.

INTEREST: The Junkers Ju. 290 is a modified version of the Ju. 90, with redesigned wings and tail. It has a range of about 1,700 miles at 200 miles per hour and has been reported to have a gross weight of over 90,000 pounds and to carry about 22,000 pounds of cargo. This enormous airplane is now coming into limited service.

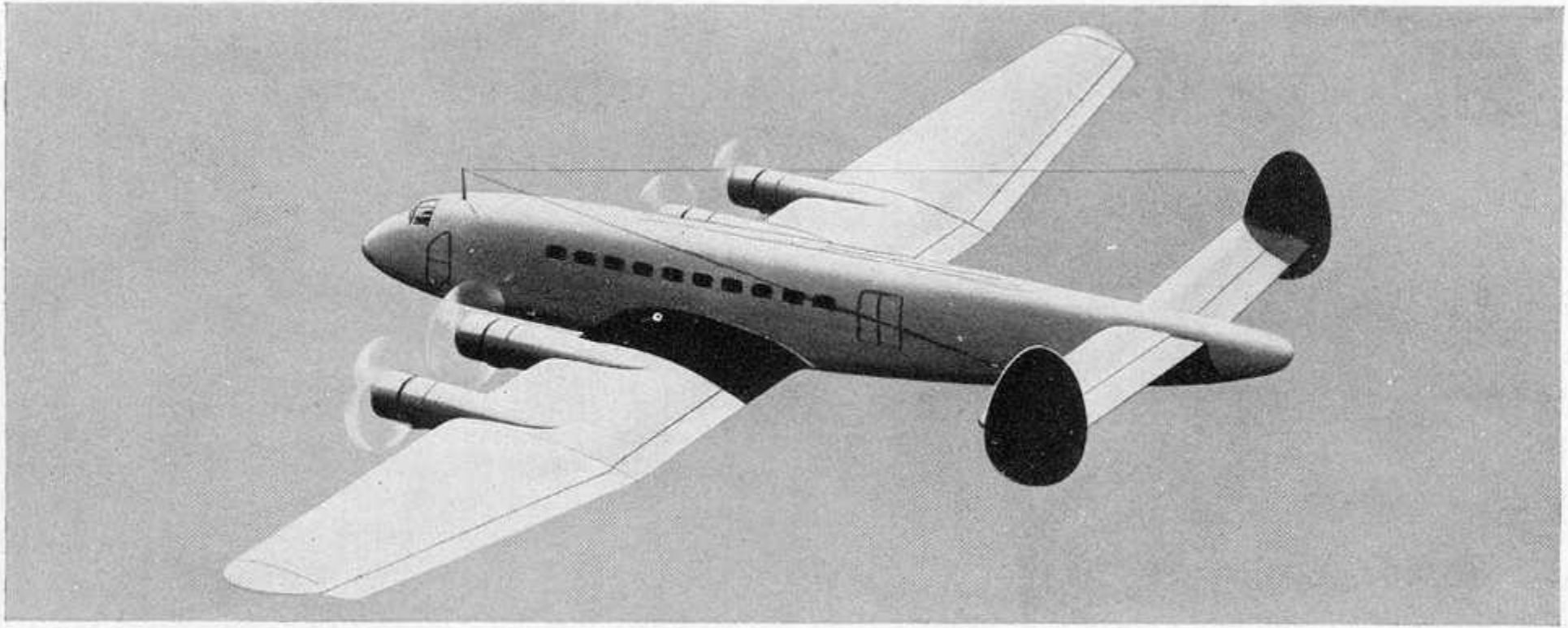
SPAN: 137 ft. 6 in.
LENGTH: 90 ft.
APPROX. MAX. SPEED: 270 m. p. h. at 17,000 ft.
SERVICE CEILING: about 22,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 2

RESTRICTED

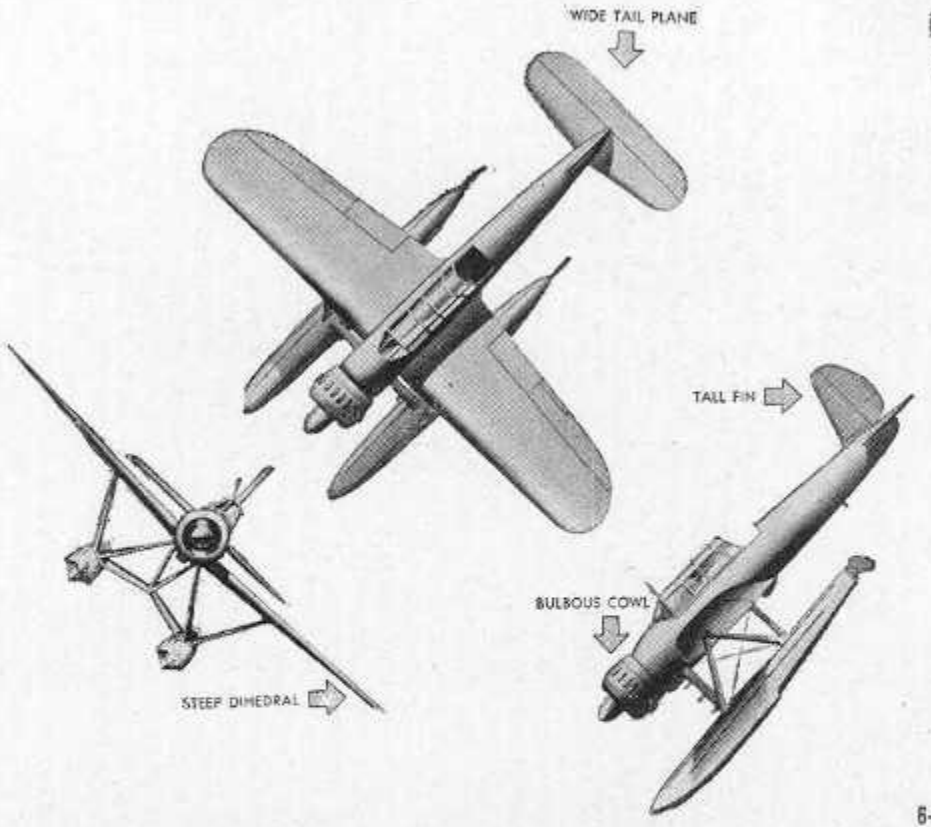
A



RECONNAISSANCE

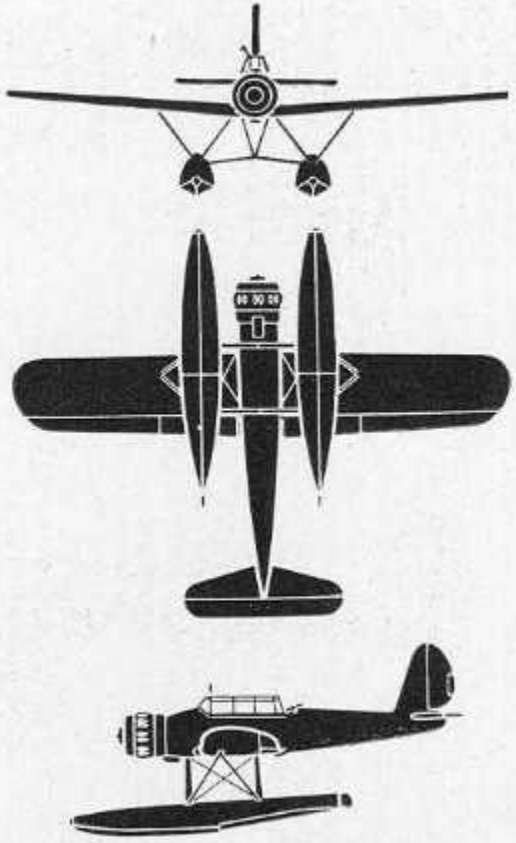
REICH

"ARADO 196"



ARADO
GERMANY

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Single radial engine, low-wing monoplane with twin floats. There is also a single-float model with small wing-tip floats (Photo B.) Wing has full dihedral, with slight taper on trailing edge and rounded tips. Stabilizer is tapered on leading edge with rounded tips.

INTEREST: The Arado first attracted attention by its association with the Graf Spee action in December 1939. One was carried on the German battleship but failed to take off at any time during the battle against the British cruisers. The Bismarck carried several Arados, which took off to attack the Catalinas after these American-made flying boats had spotted the German warship. Operating from bases along the French coast, AR 196's have been used to harass antisub patrols of the British Coastal Command, and against light naval vessels.

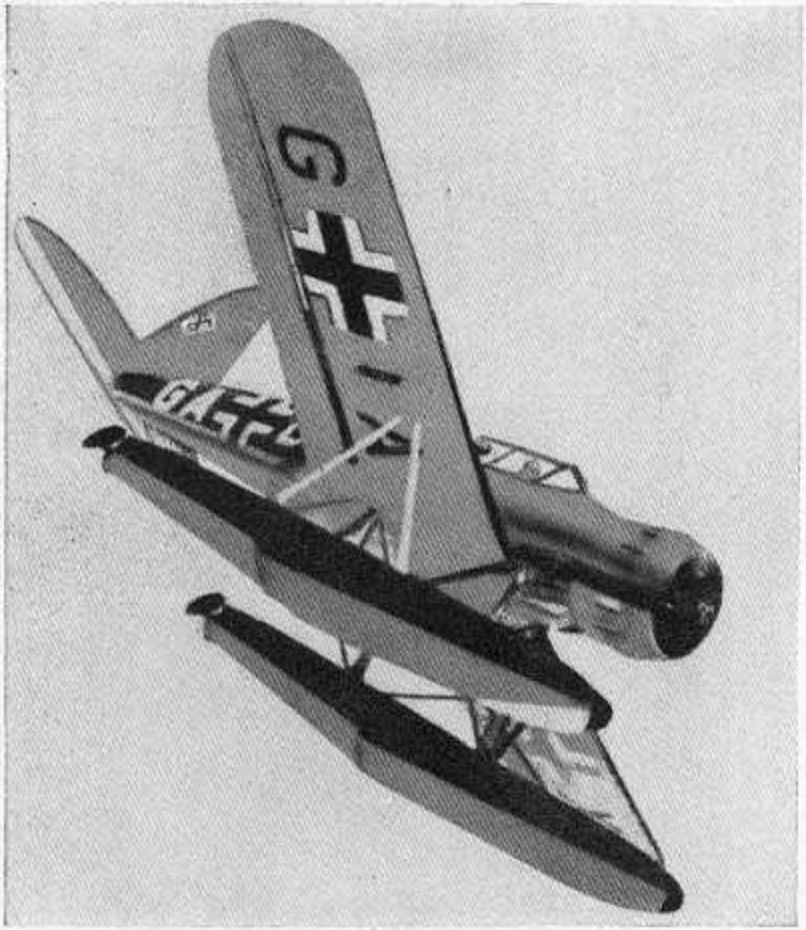
SPAN: 41 ft.
LENGTH: 36 ft. 1 in.
MAX. SPEED: 195 m. p. h. at 3,000 ft.
SERVICE CEILING: 21,500 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

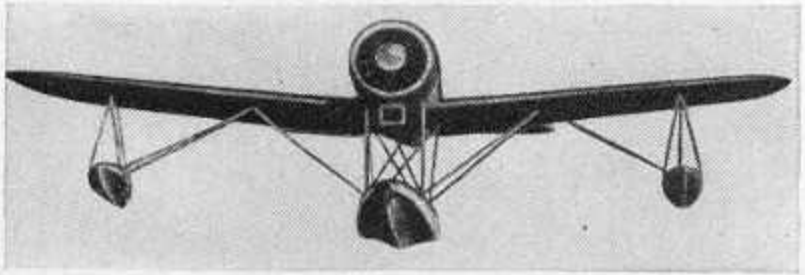
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

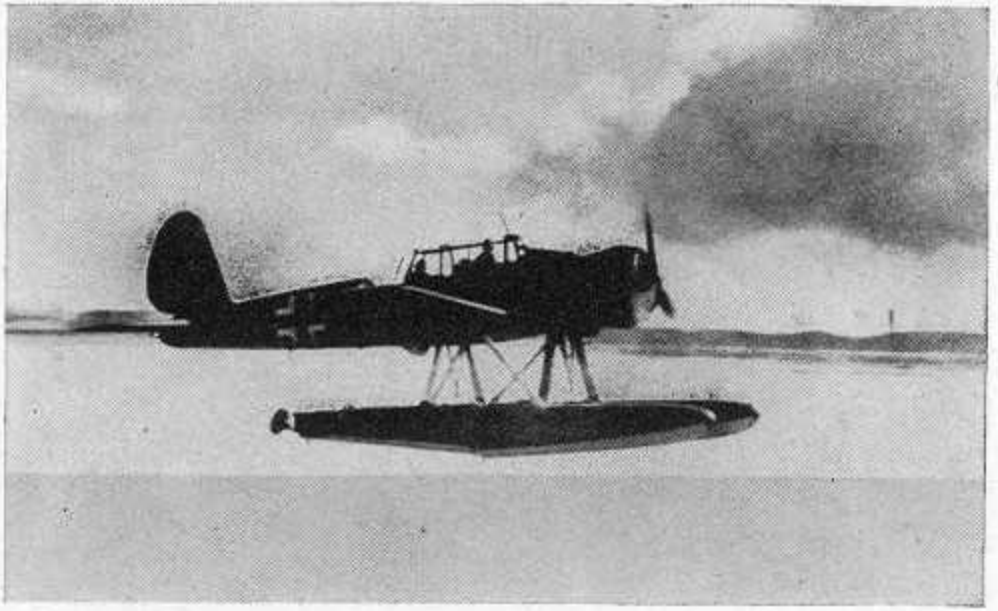
A



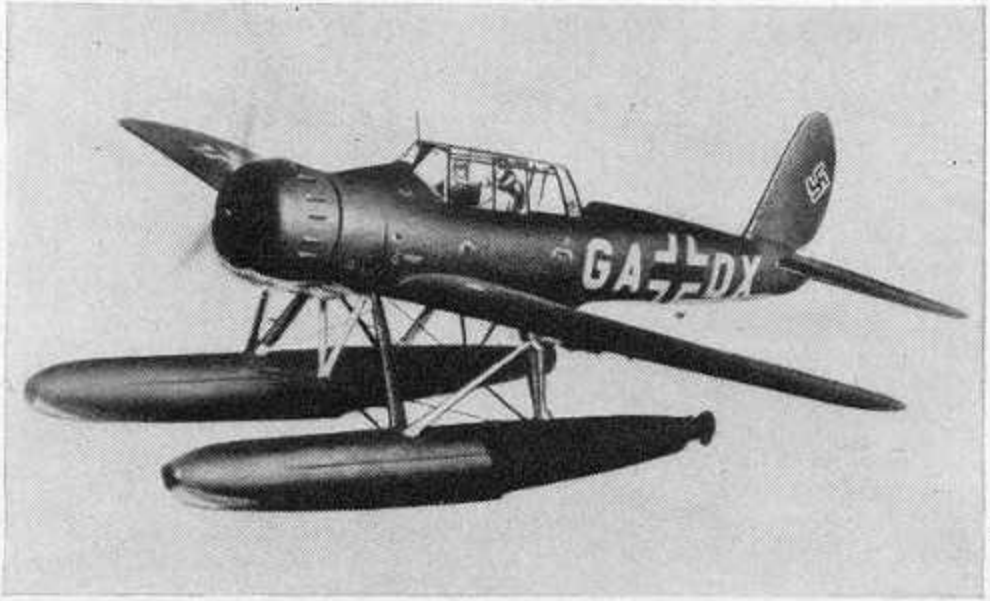
B



C



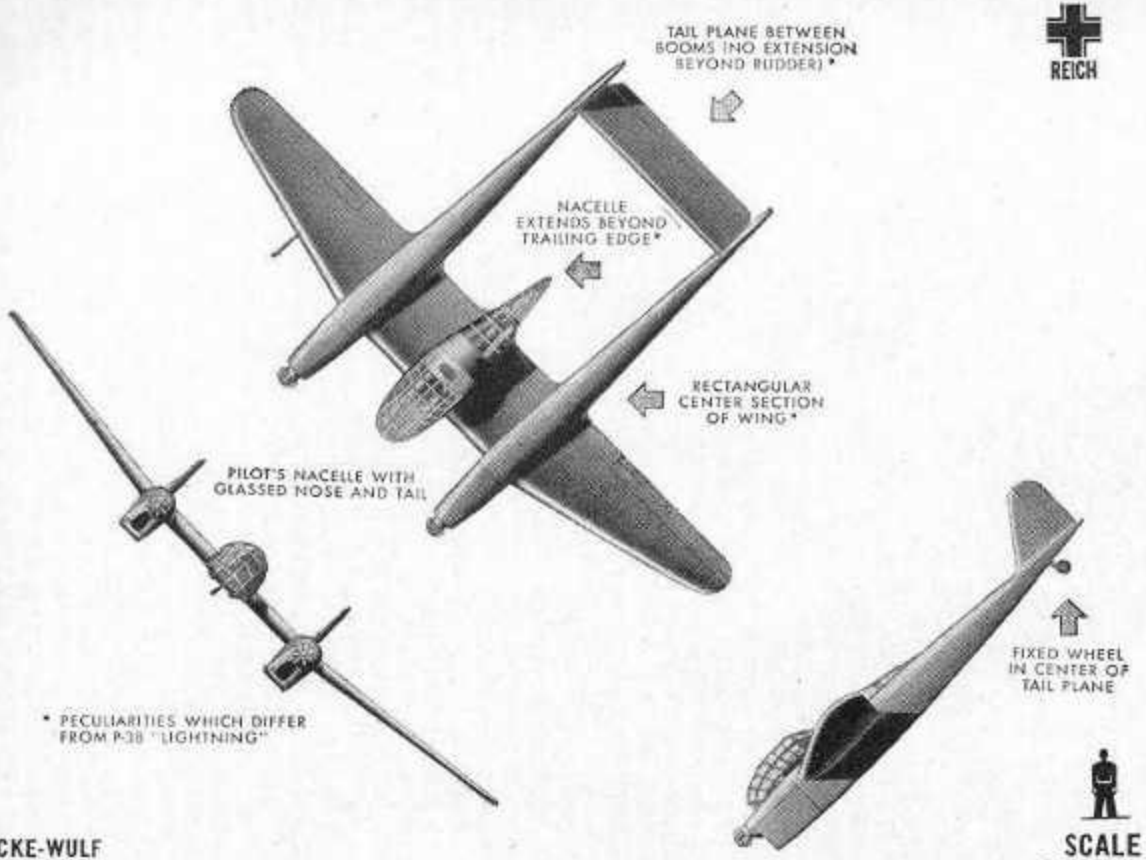
D

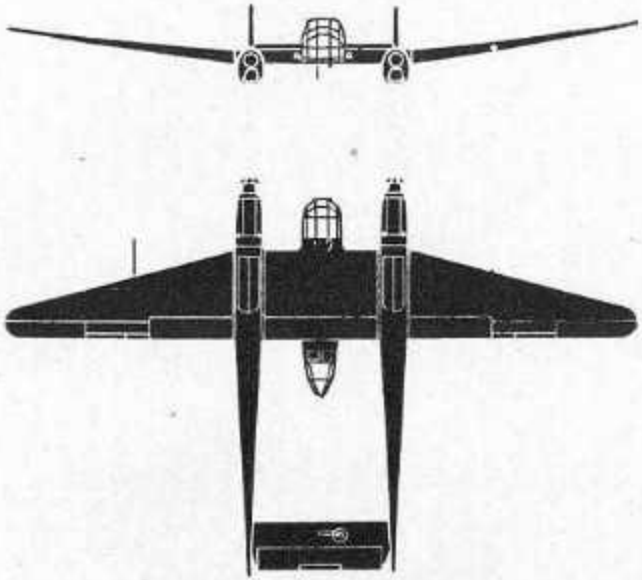


RECONNAISSANCE

REICH

FOCKE-WULF "F. W. 189"





FOCKE-WULF
GERMANY

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Low-wing monoplane with two in-line engines. Engines extend forward of fuselage nose. Fuselage is well glazed, and extends to a point aft of trailing edge of wing. Wing is tapered on leading edge in outer panels with sharply rounded tips and has straight trailing edge. Engine nacelles extend aft as twin booms ending in twin fins and rudders. Rectangular stabilizer and elevator set between booms.

INTEREST: Called the "Flying Eye," these aircraft are used for army cooperation, ground attack, communications, advanced training, and as supply transports and ambulances. The normal crew is three. Take-off and landing runs are short and the landing gear is sufficiently robust for front-line flying fields of poor surface quality. It has proved extremely useful on the Russian front.

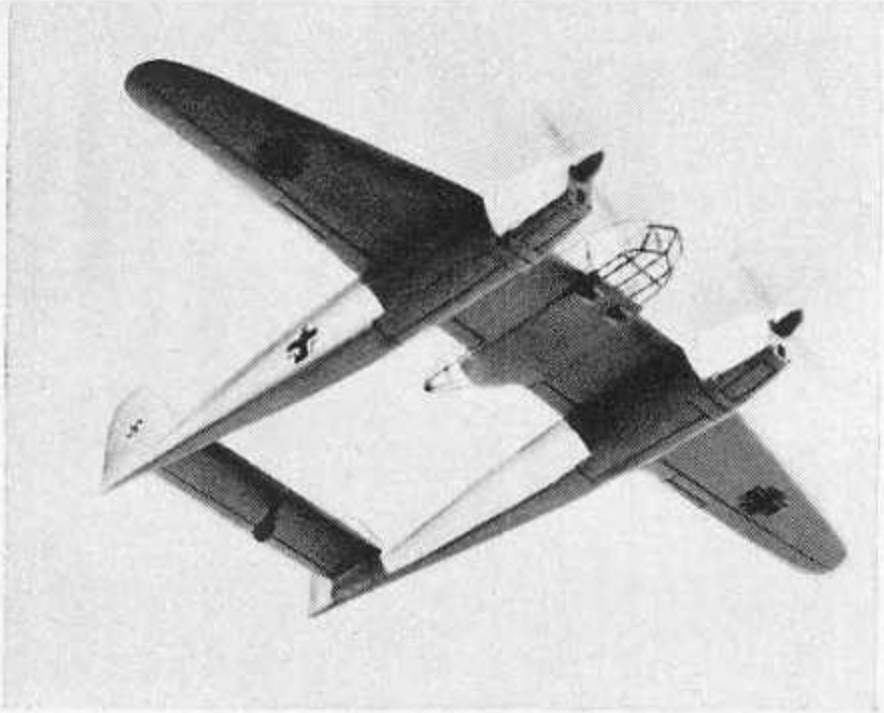
SPAN: 60 ft. 5 in.
LENGTH: 39 ft. 5 in.
MAX. SPEED: 210 m. p. h. at 8,530 ft.
SERVICE CEILING: 27,550 ft. (normal load)

RESTRICTED

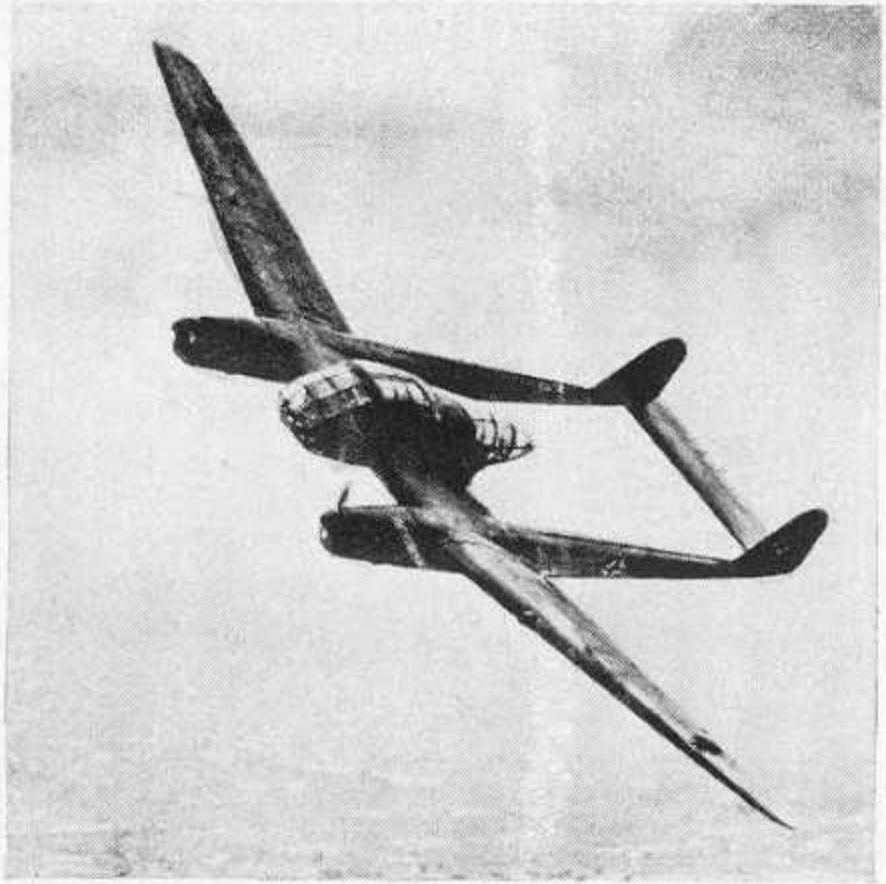
APRIL 1942
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

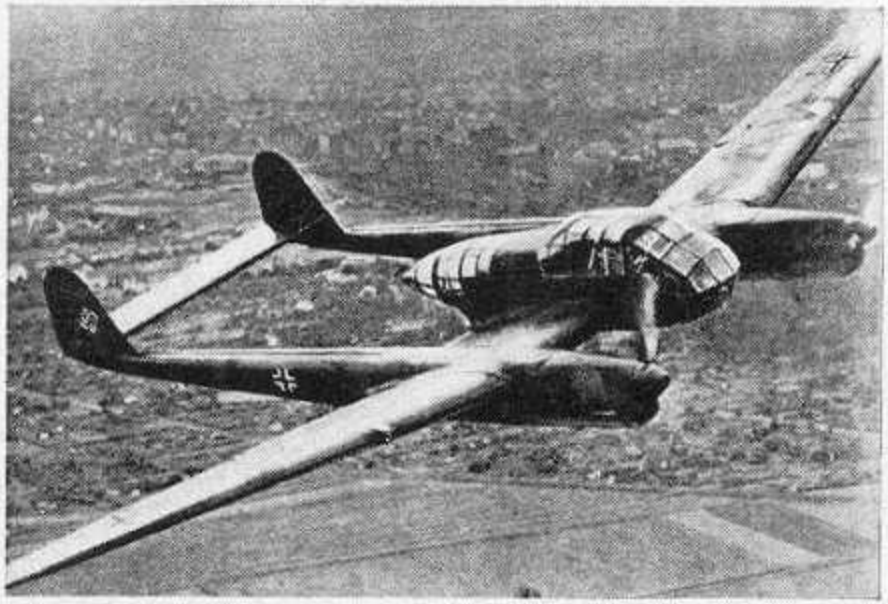
A



C



B

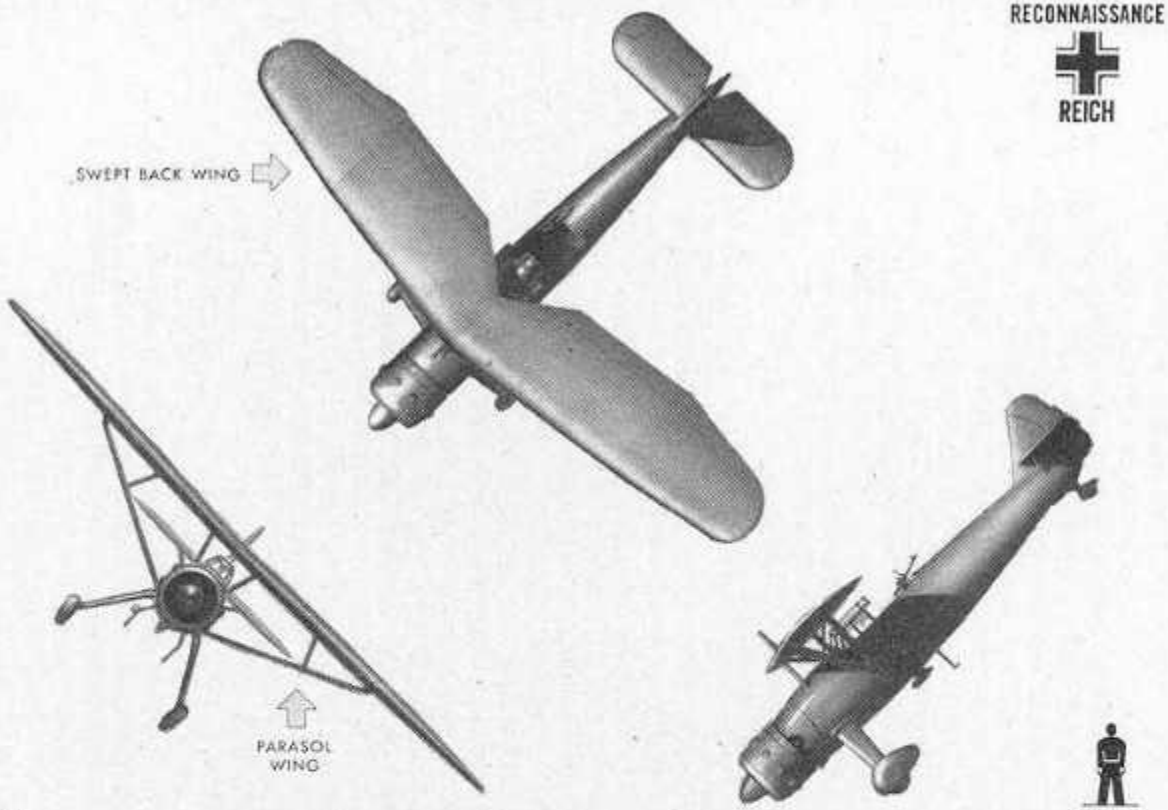


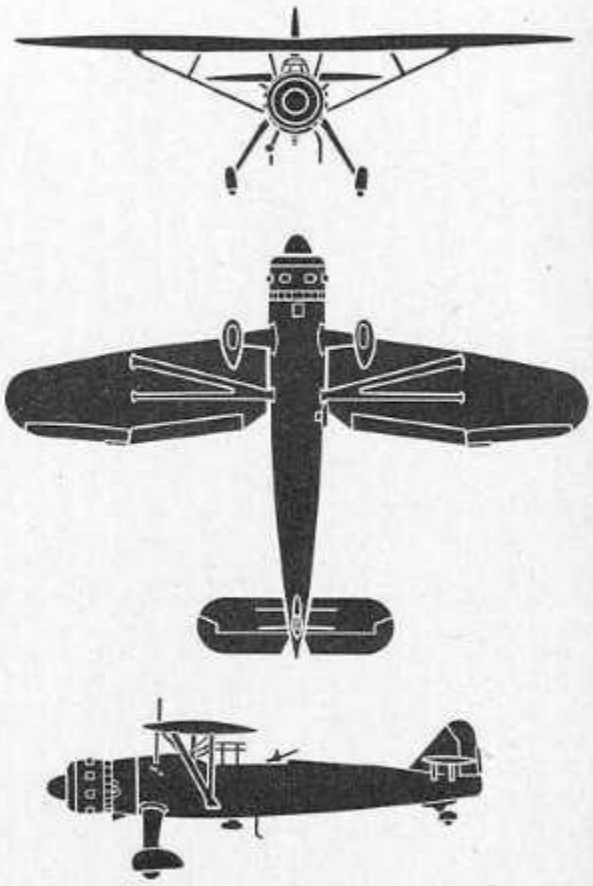
D

RECONNAISSANCE

REICH

HS. 126





SCALE
6-FOOT MAN

HENSCHEL
GERMANY

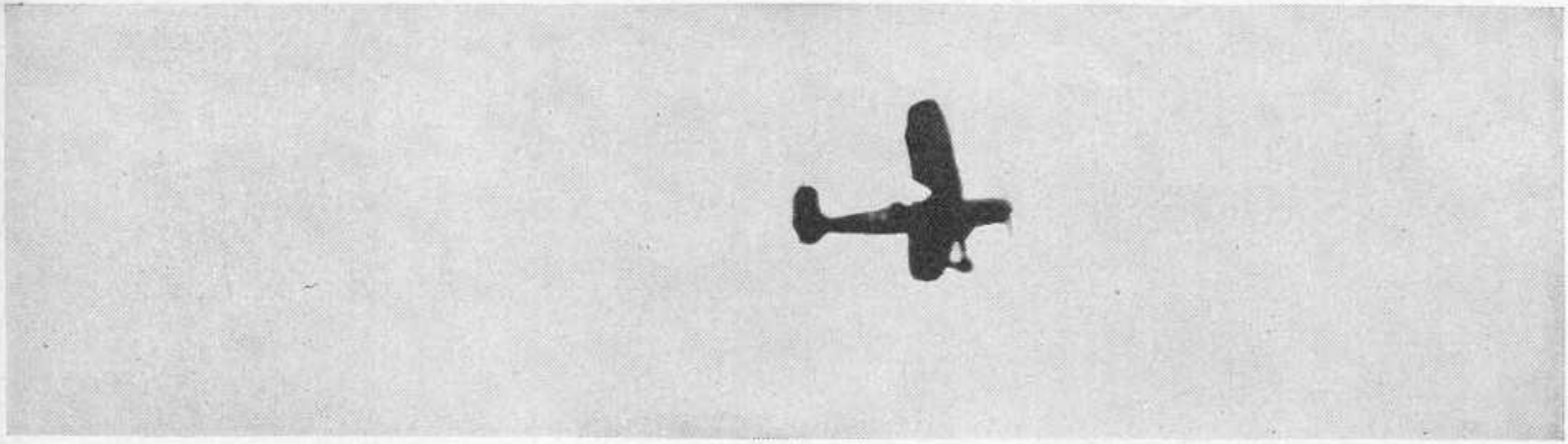
DISTINGUISHING FEATURES: Single radial engine monoplane with parasol wing. Wing has an irregular swept-back appearance with a large **V** cut-out in center of trailing edge. Wing is supported above fuselage by **N**-shaped struts. It is braced by **V** struts. Cylindrical fuselage tapers rearward. Cockpit semi-enclosed. Tailplane is straight with round tips and is mounted halfway up fin. It is strut braced. Fixed cantilever landing gear with wheel pants.

INTEREST: The Henschel Army cooperation monoplane came into service in 1936. The power plant is a Bramo Fafnir 323 air-cooled radial engine rated at 940 horsepower at 12,000 feet. This plane is now obsolescent but will remain in use in decreasing numbers for various duties. It can be used as a glider tug.

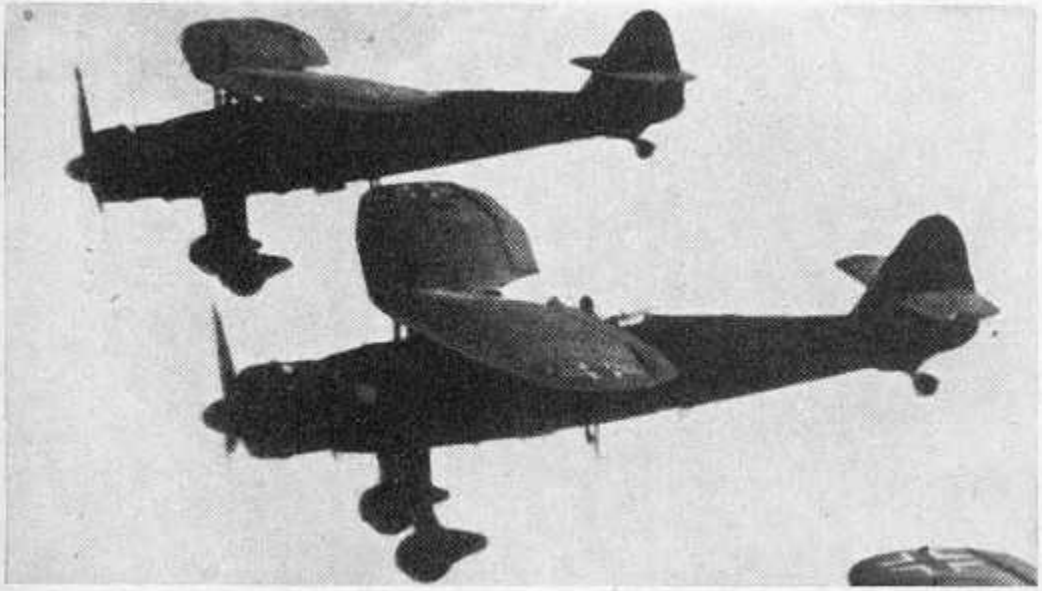
SPAN: 47 ft. 7 in.
LENGTH: 35 ft. 8 in.
SERVICE CEILING: 27,000 ft.
MAX. SPEED: 230 m. p. h. at 15,000 ft.

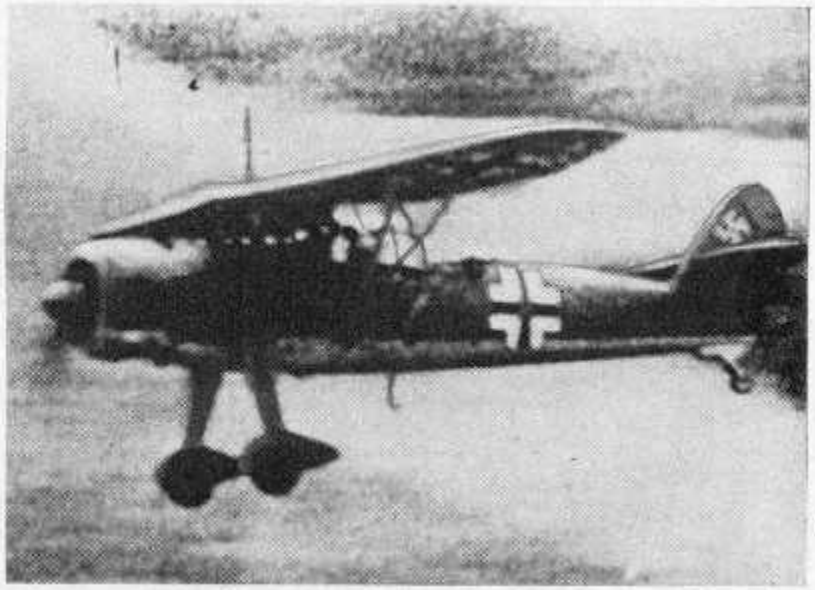
RESTRICTED

A



B



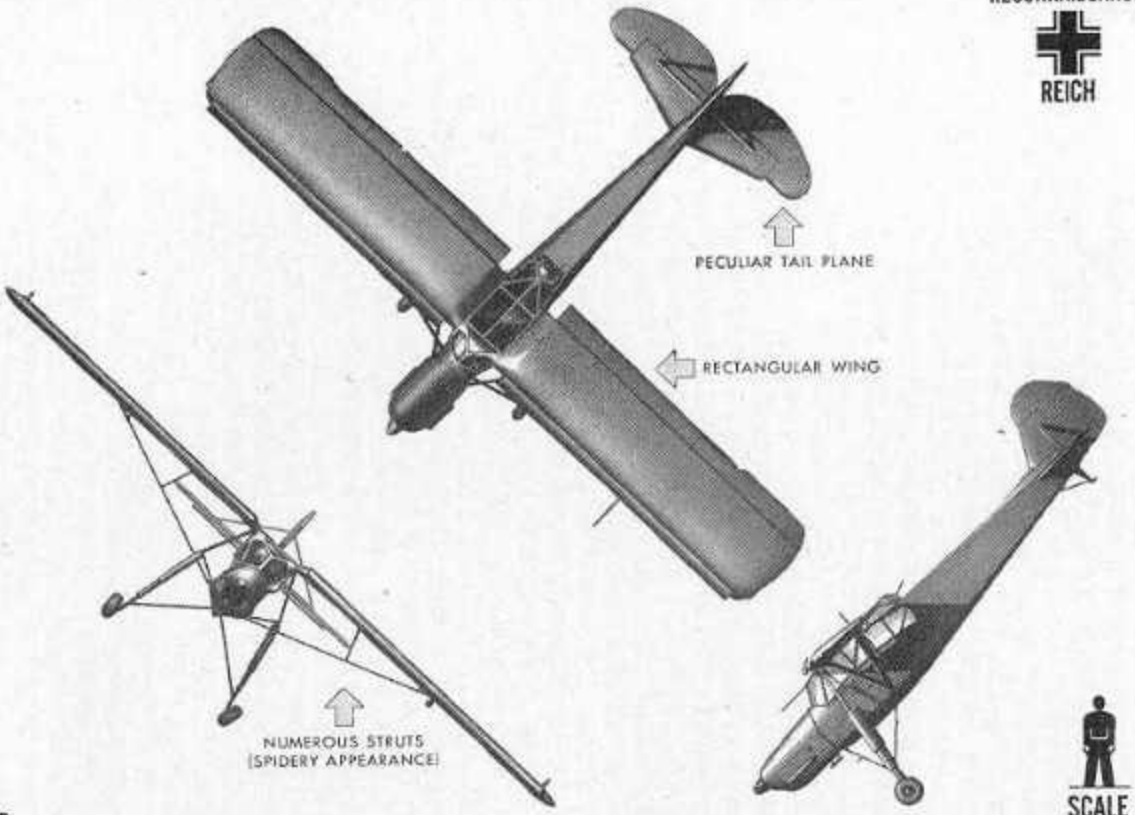


C

Fl. 156

RECONNAISSANCE

REICH



SCALE

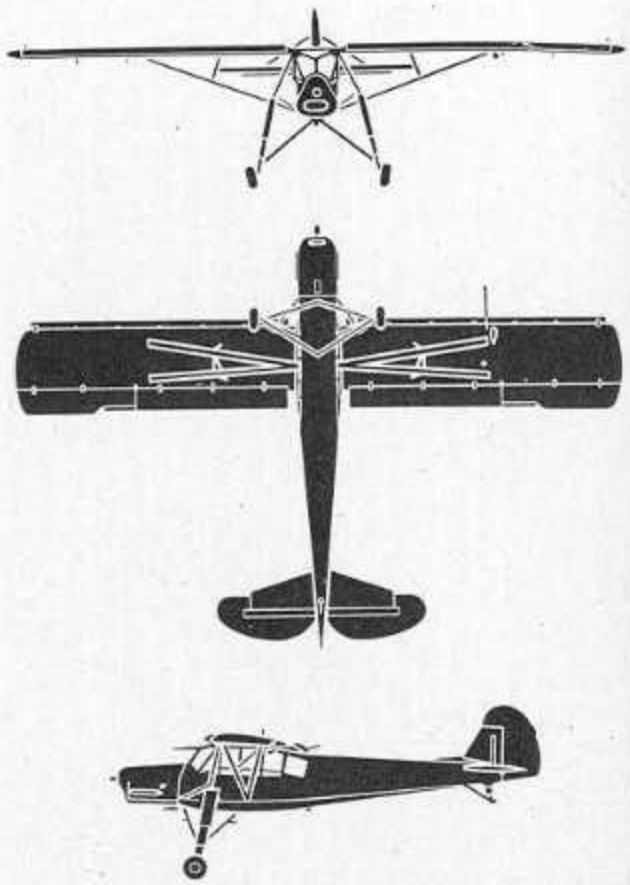
6-FOOT MAN

FIESELER

GERMANY

DISTINGUISHING FEATURES: Single-engine, high-wing monoplane. Slim nose and fuselage. Straight, rectangular-shaped wings braced with V struts. Large glazed canopy. The elevators are curved with a large cut-out in the center at the trailing edge. Fixed landing gear with long stork-like legs.

INTEREST: The "Storch" is used primarily for light communications work. It is about the nearest approach to an autogyro that is possible with fixed wings. It can maintain flight at 31 m. p. h. and lands at 25 m. p. h. The maximum landing run using brakes is only 30 yards. The plane is equipped with full-span leading edge slots which may be of a fixed or movable type. Large camber-changing flaps aid slow landings. This aircraft received mention for a landing in a small public park in Paris. General Montgomery used a captured "Storch" for some time in Libya.



SPAN: 46 ft. 10 in.

LENGTH: 32 ft. 6 in.

SERVICE CEILING: 17,000 ft.

MAX. SPEED: 145 m. p. h. at 3,000 ft.

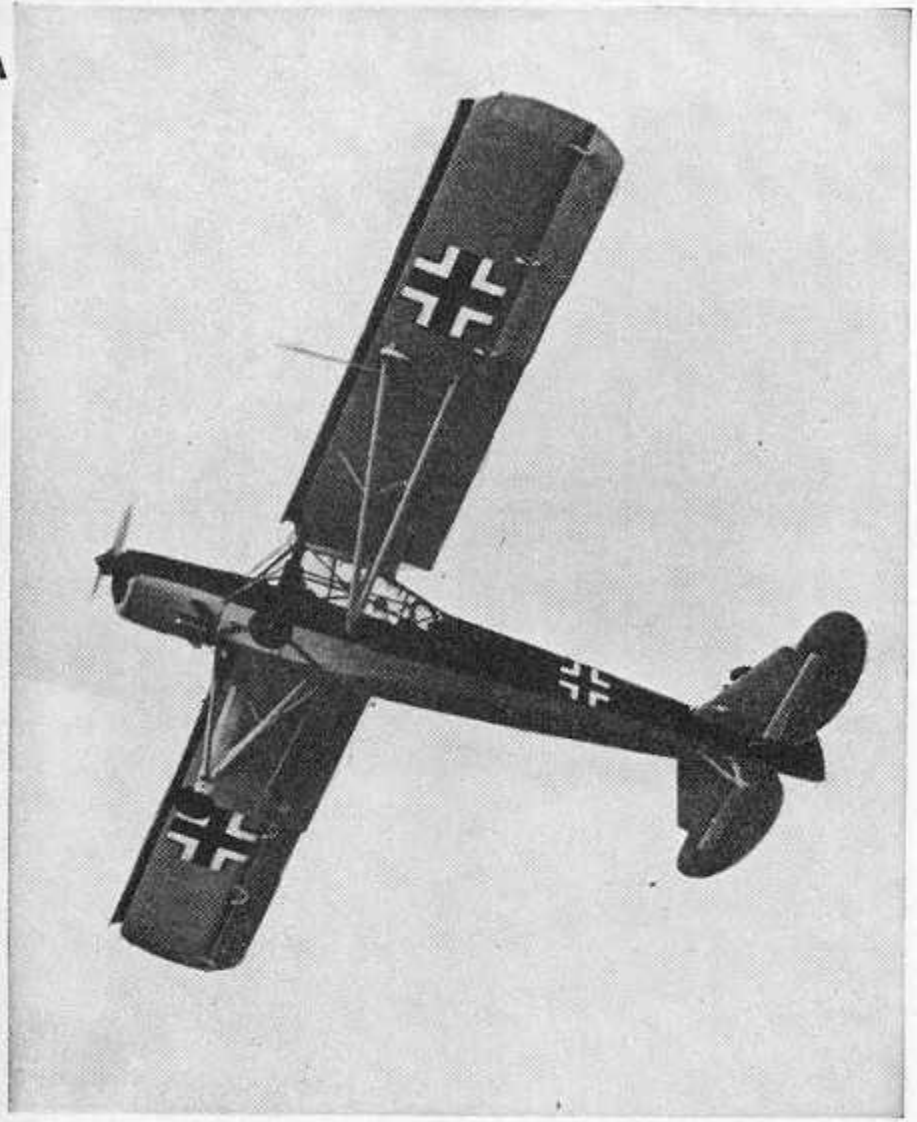
RESTRICTED

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

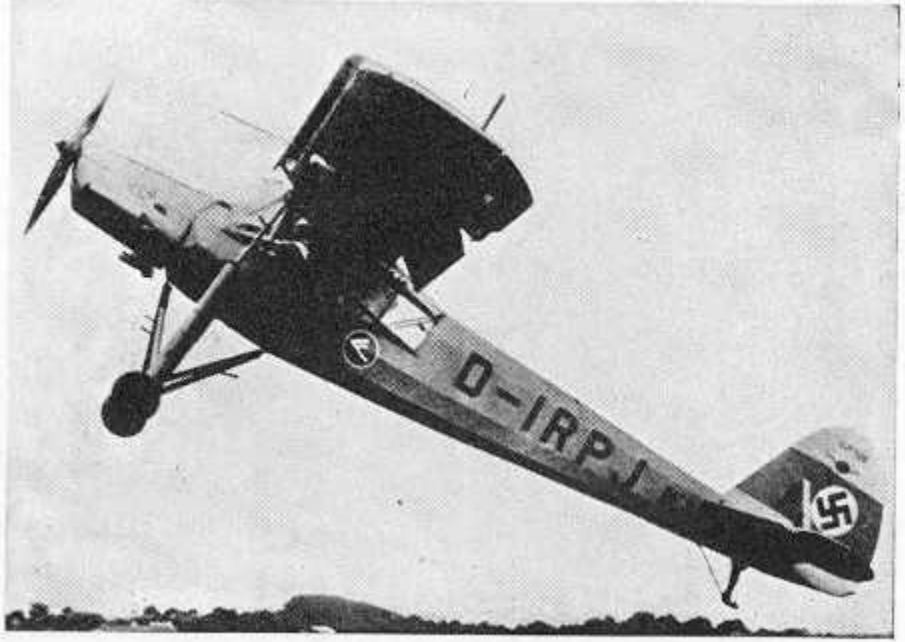
SUPPLEMENT ONE

WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

A



B

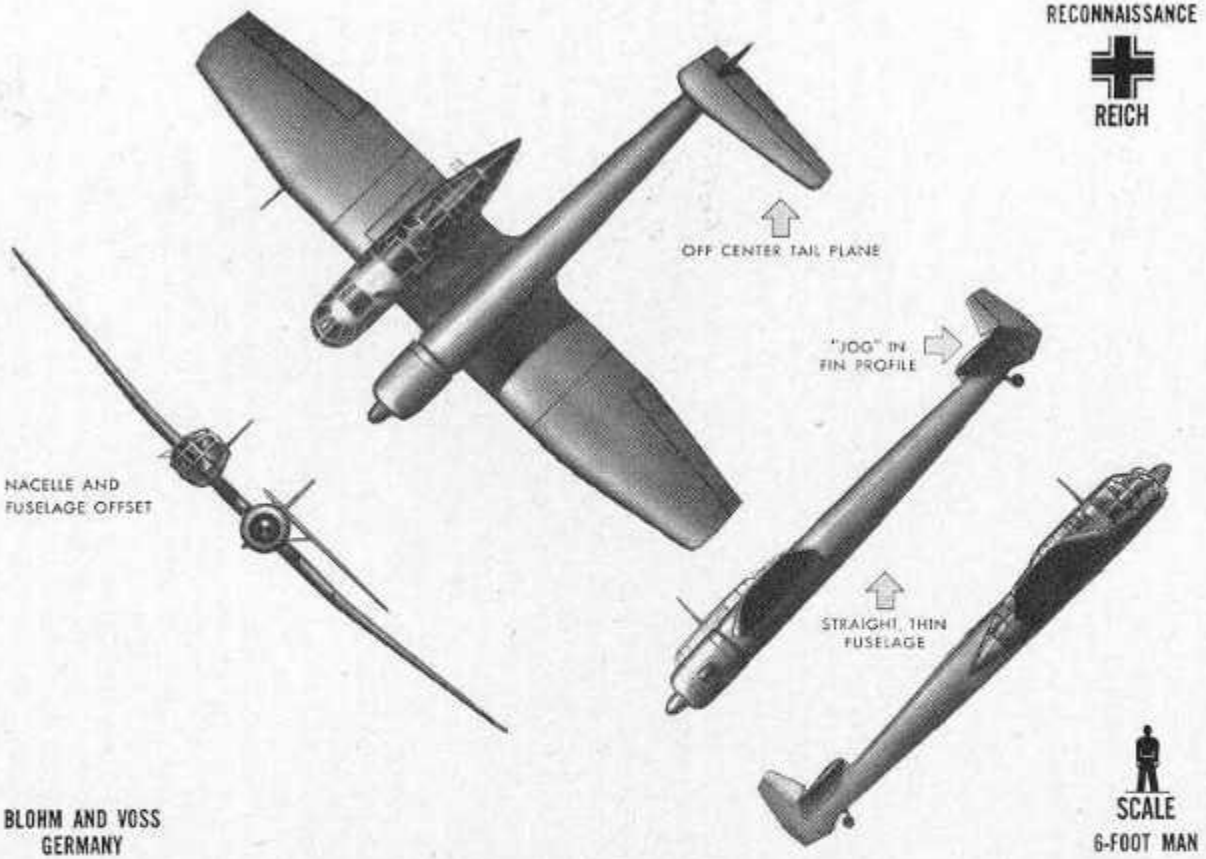


C

B. V. 141

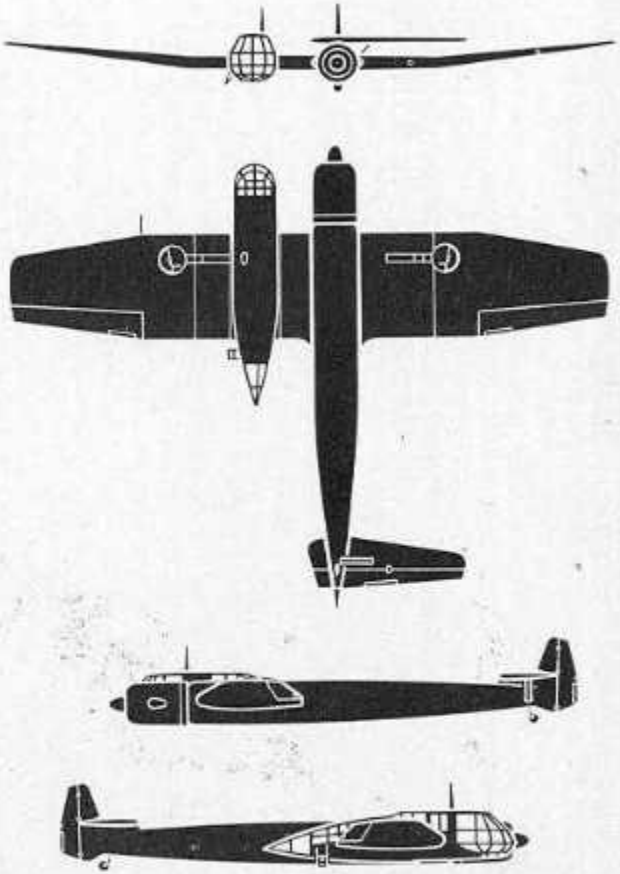
RECONNAISSANCE

REICH



SCALE
6-FOOT MAN

BLOHM AND VOSS
GERMANY



DISTINGUISHING FEATURES: Single-engine, midwing, asymmetrical monoplane. Wing has long, straight center section with tapered outer section and blunt tips. The engine is housed in main fuselage to the left of the cabin, which projects beyond both leading and trailing edges of wing. Horizontal stabilizer extends to the left side of the fuselage with only small stub on the right side. Single fin and rudder is small and angular.

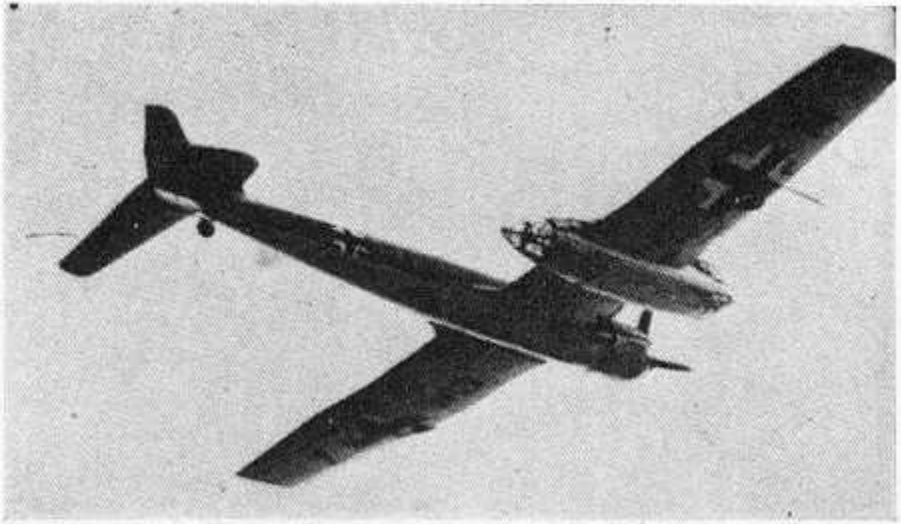
INTEREST: The B. V. 141 was designed for tactical reconnaissance and may be in service in small numbers. A very odd-looking aircraft, its principal advantage is in visibility obtained by the unusual design.

SPAN: 60 ft. (est.) **SERVICE CEILING:**
LENGTH: 45 ft. (est.)
APPROX. SPEED: 280 m. p. h. at 16,000 ft.

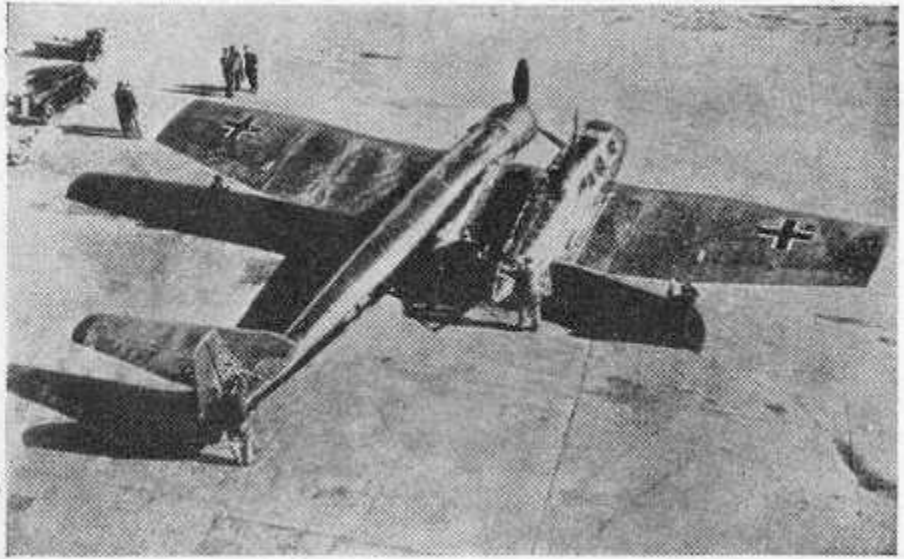
RESTRICTED

A

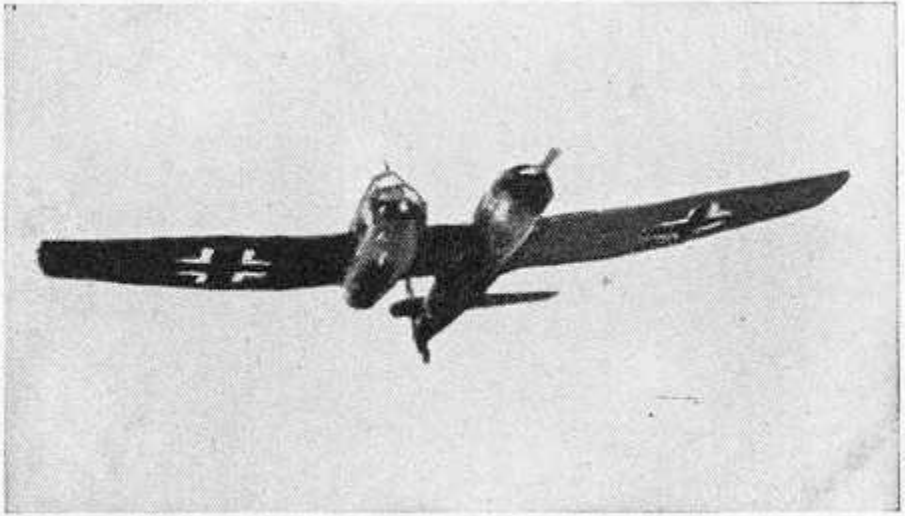
C



B



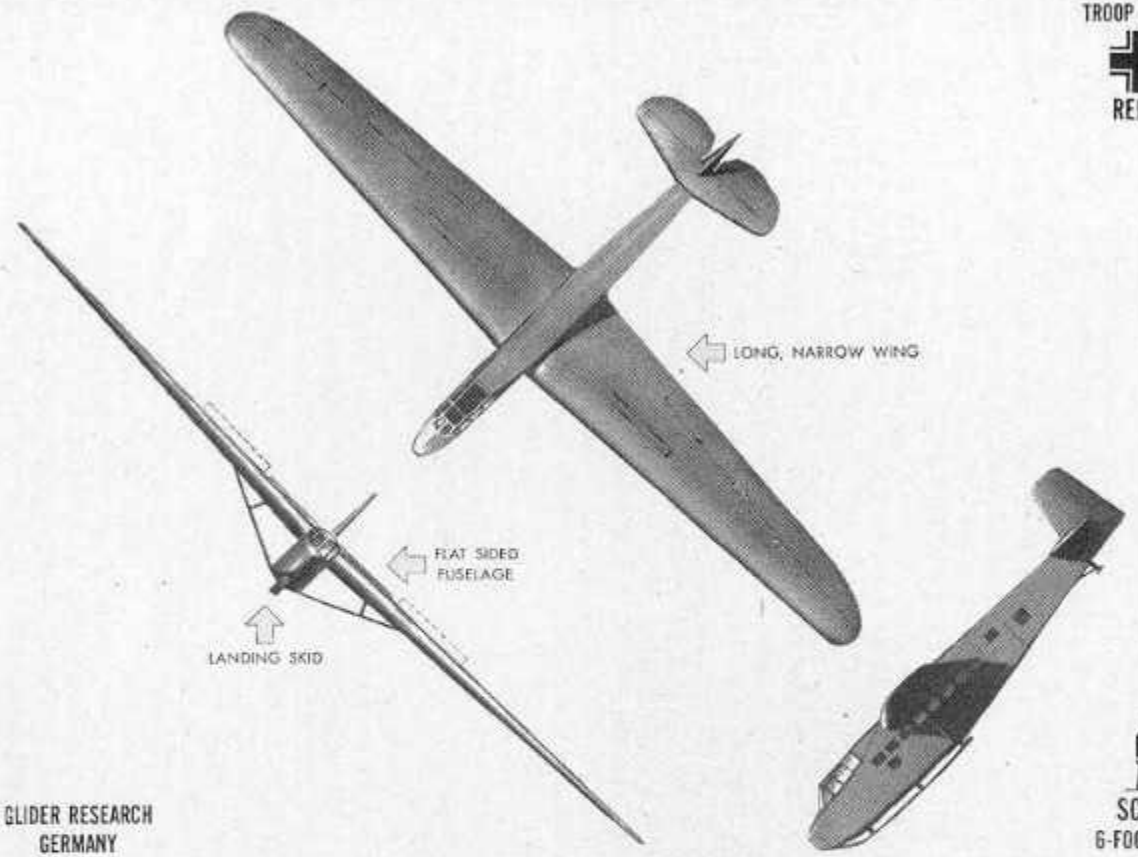
D



TROOP GLIDER

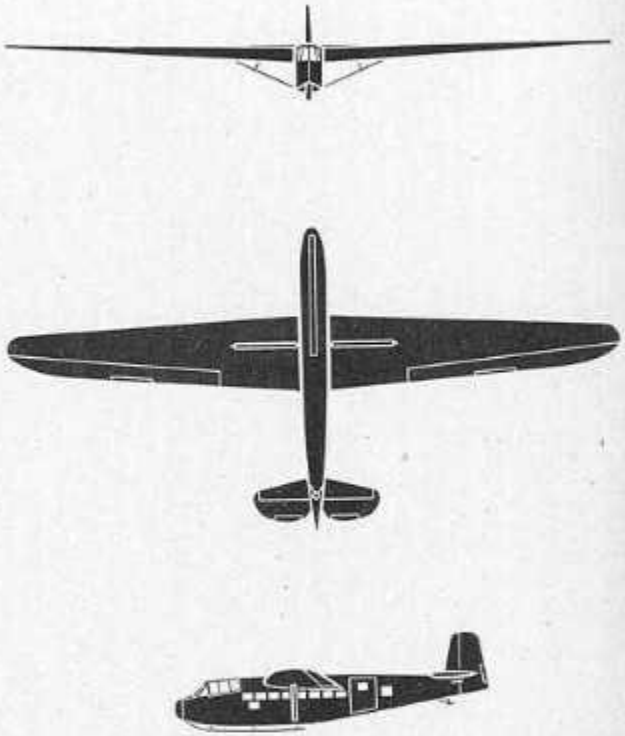
REICH

D. F. S. 230



GLIDER RESEARCH
GERMANY

SCALE
6-FOOT MAN



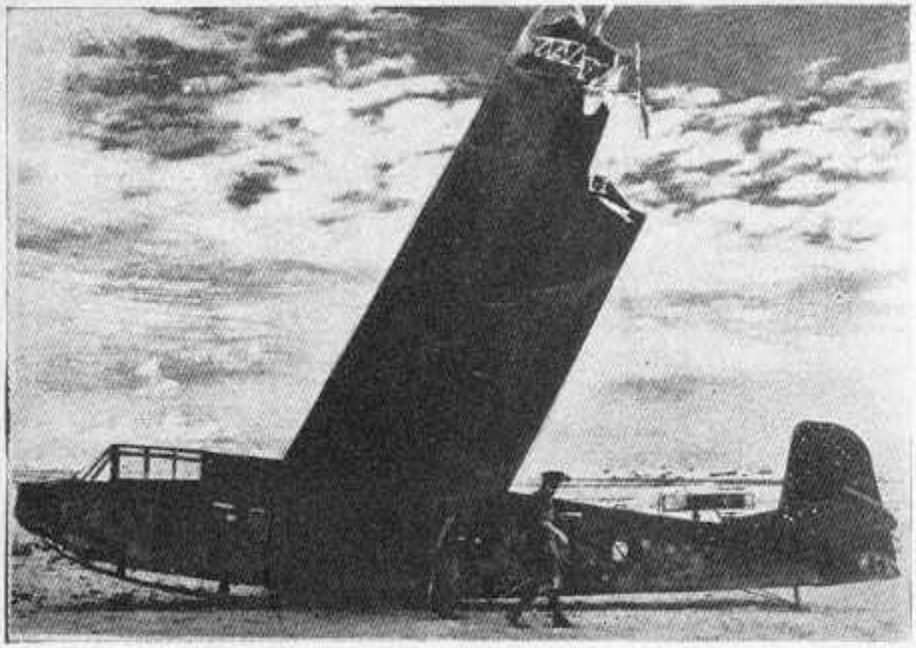
DISTINGUISHING FEATURES: High-wing monoplane braced with single struts. Wing is long and narrow with slight taper on leading edge, tapered trailing edge, and small rounded tips. Fuselage long and narrow in plan and has straight top. Cross-section is rectangular. Tailplane has tapered leading edge with round tips and curved trailing edge with V cut-out. Tall, single fin and rudder is slightly tapered with blunt top.

INTEREST: The D. F. S. 230 is one of Germany's standard gliders and was used in the occupation of Crete. The optimum gliding speed of this glider after release is approximately 70 m. p. h. Its landing speed in still air is from 35 to 40 m. p. h. It is a 10-seater of simple design.

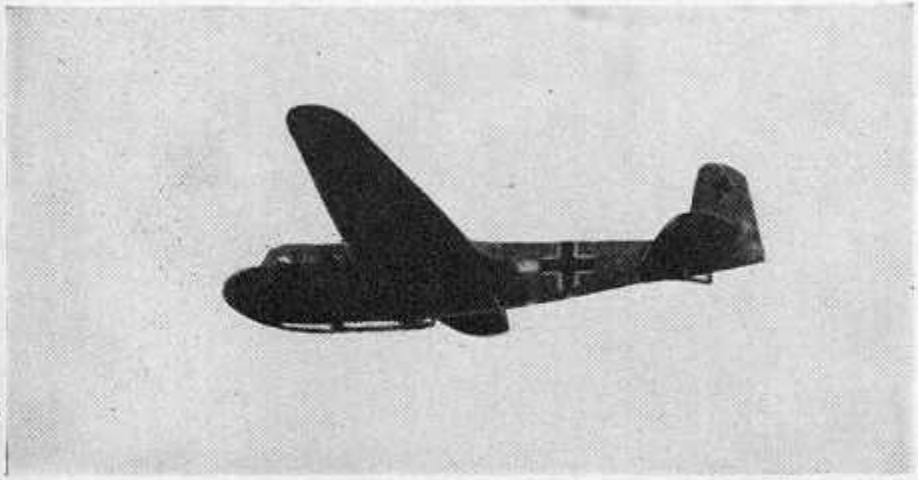
SPAN: 72 ft. 4 in. **SERVICE CEILING:**
LENGTH: 37 ft. 6 in.
NORMAL TOWING SPEED: 110 m. p. h.

RESTRICTED

A



B



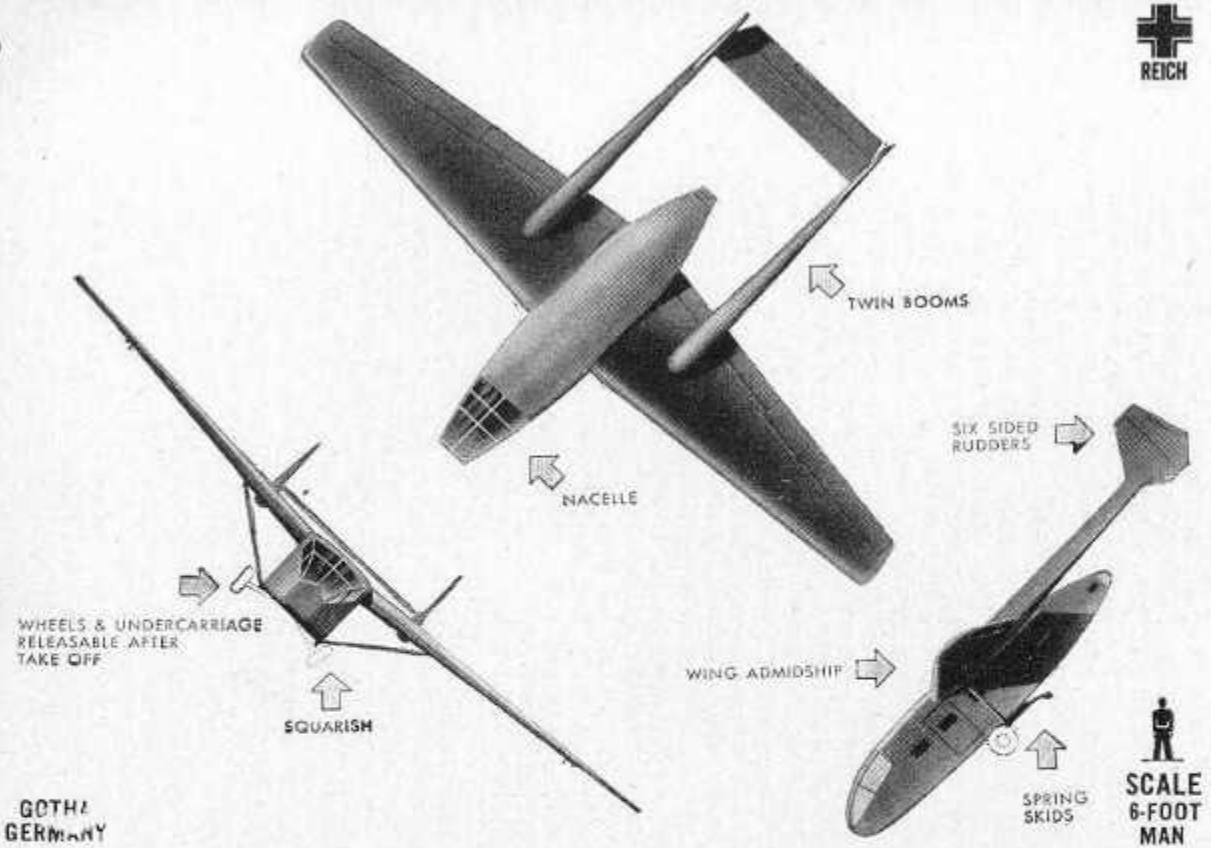
C

D

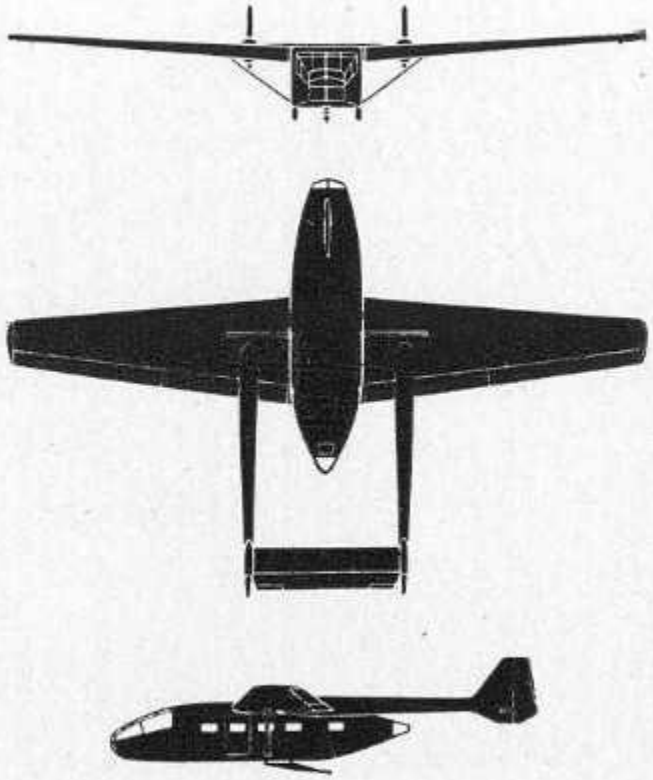
GLIDER

REICH

"GOTHA 242"



GOTHA
GERMANY



SPAN: 79 ft.
LENGTH: 52 ft. 6 in.
MAXIMUM TOWING SPEED: 149 m. p. h.

DISTINGUISHING FEATURES: High-wing, twin-boom monoplane. Wing equally tapered with square tips. Fuselage wide and deep with square cross section. Long massive nose. Twin booms support rectangular stabilizer and twin fins and rudders of angular outline.

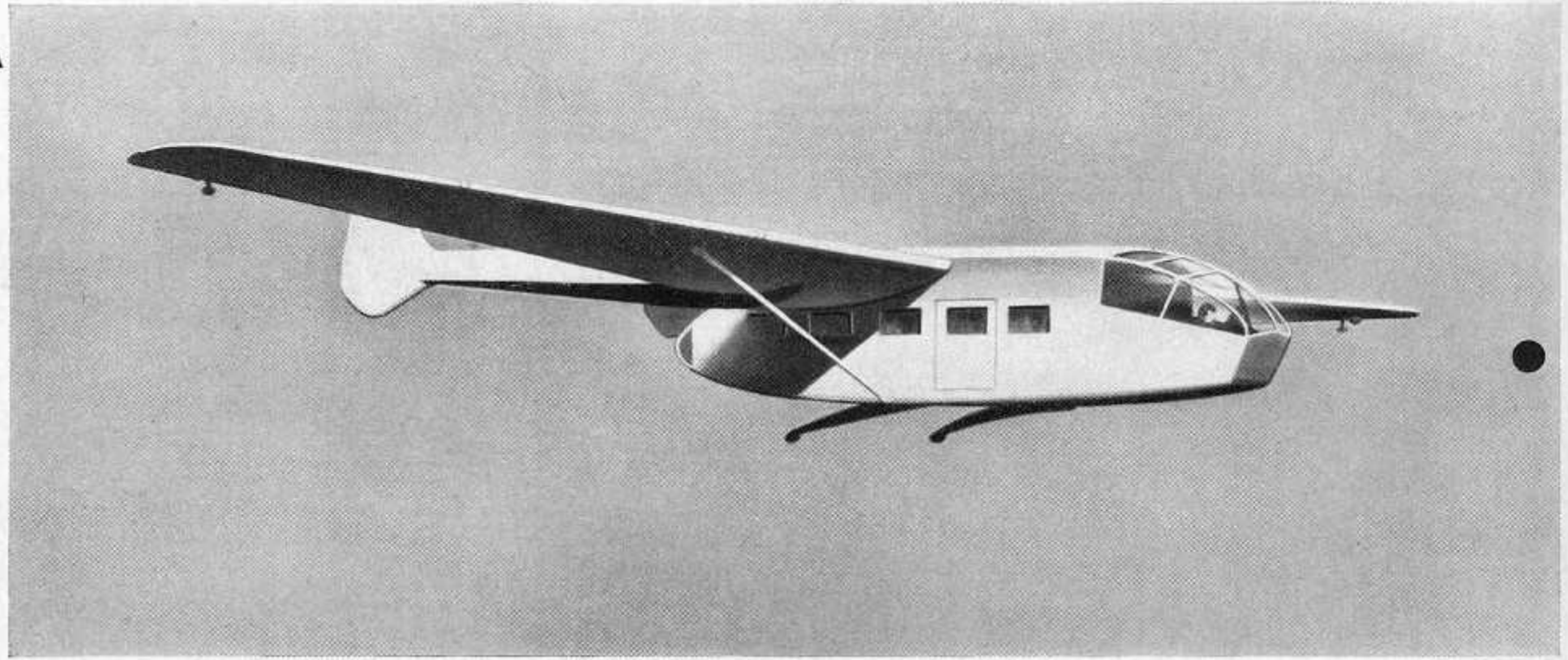
INTEREST: This glider is normally towed by one Junkers Ju 52 transport. The glider flies about 15 feet above the tug in order to keep clear of the slip-stream and to avoid stalling the tug by pulling its tail down. It carries 2 pilots and 21 soldiers or freight (maximum freight capacity is 5,300 pounds). It lands on three spring skids, the forward one retracting during flight. There are two powered versions of this glider, one apparently with radial engines and the other with int line engines. Reports from the Russian front state tha these gliders can transport field artillery, moving as many as 20 batteries in one morning.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

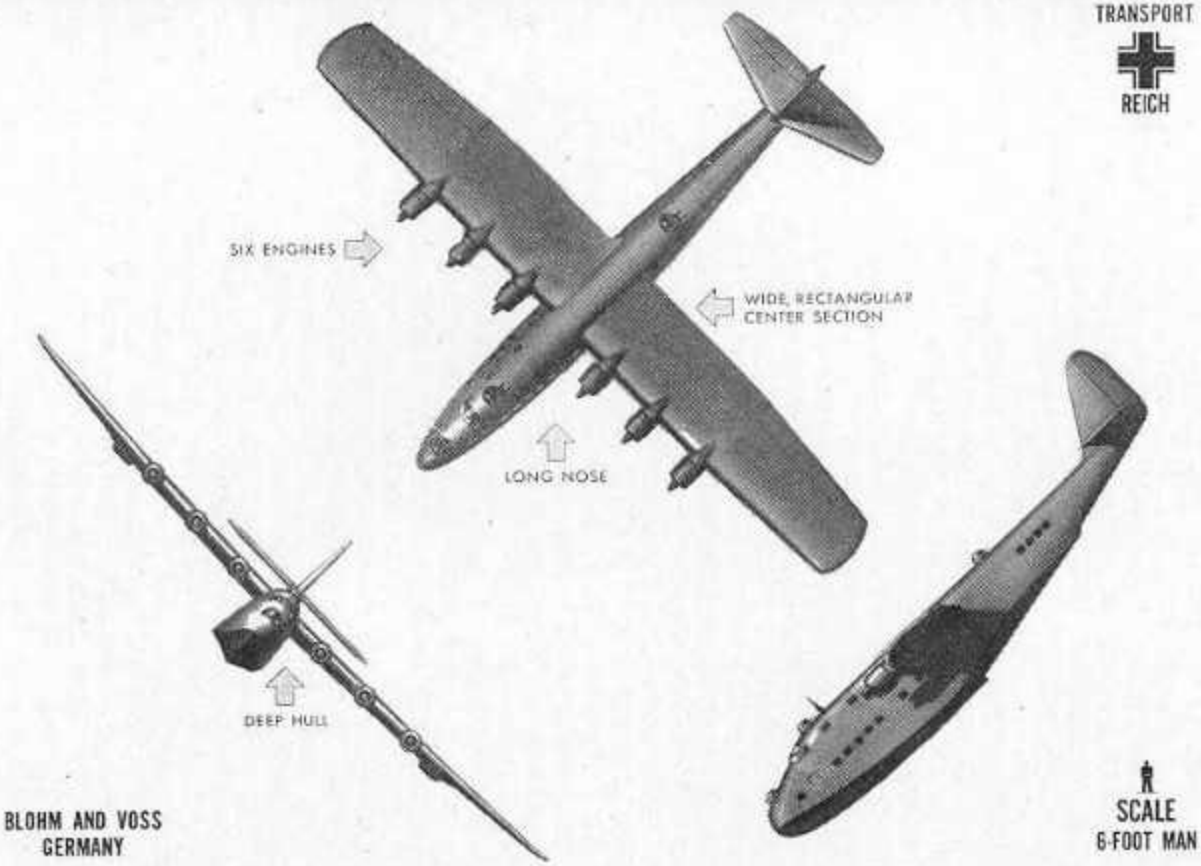
A



B. V. 222

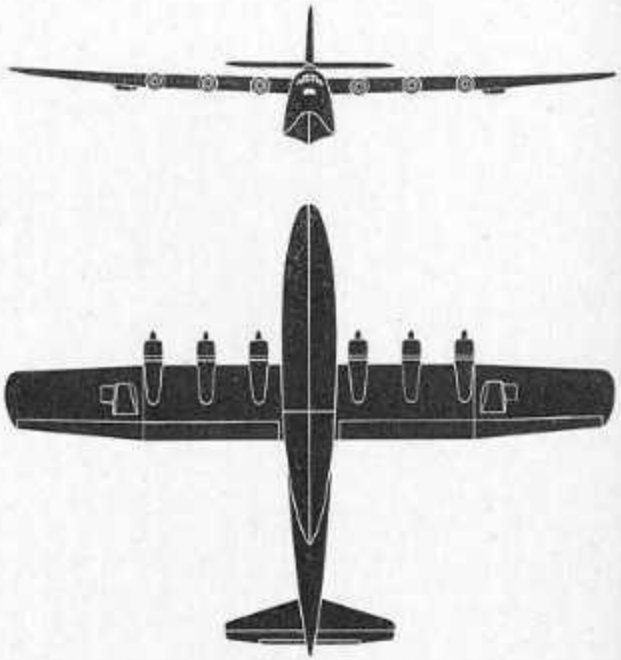
TRANSPORT

REICH



BLOHM AND VOSS
GERMANY

SCALE
6-FOOT MAN



SPAN: 150 ft.
LENGTH: 115 ft.
MAX. SPEED: 240 m. p. h. at 15,000 ft. (est.)
SERVICE CEILING:

DISTINGUISHING FEATURES: Six-engine, high-wing monoplane. Inner sections of wings are straight while outer panels taper slightly to rather blunt tips. The two-step hull is long and deep with straight sides. Tall, single fin and rudder has tapered leading edge with curved trailing edge. Stabilizer is set on fin above fuselage. Wing tip floats retract inward into wing.

INTEREST: The B. V. 222 is probably the largest aircraft, excluding gliders, produced for the German Air Force since the outbreak of the war. The number of these aircraft in service is likely to be small. This flying boat is used as a long-range transport and patrol plane and carries a crew of about 10. The seating capacity is believed to be about 65 men.

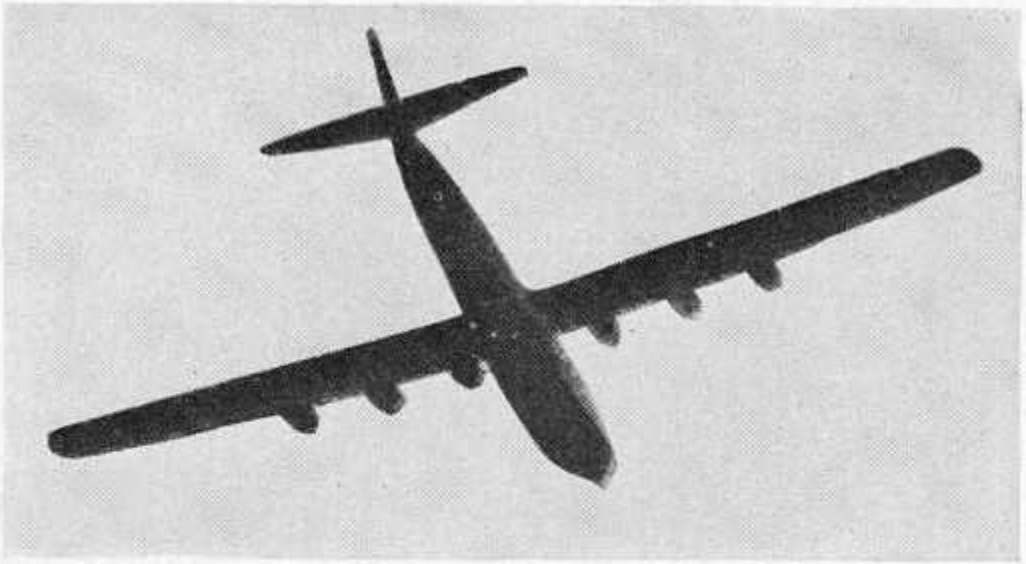
NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE

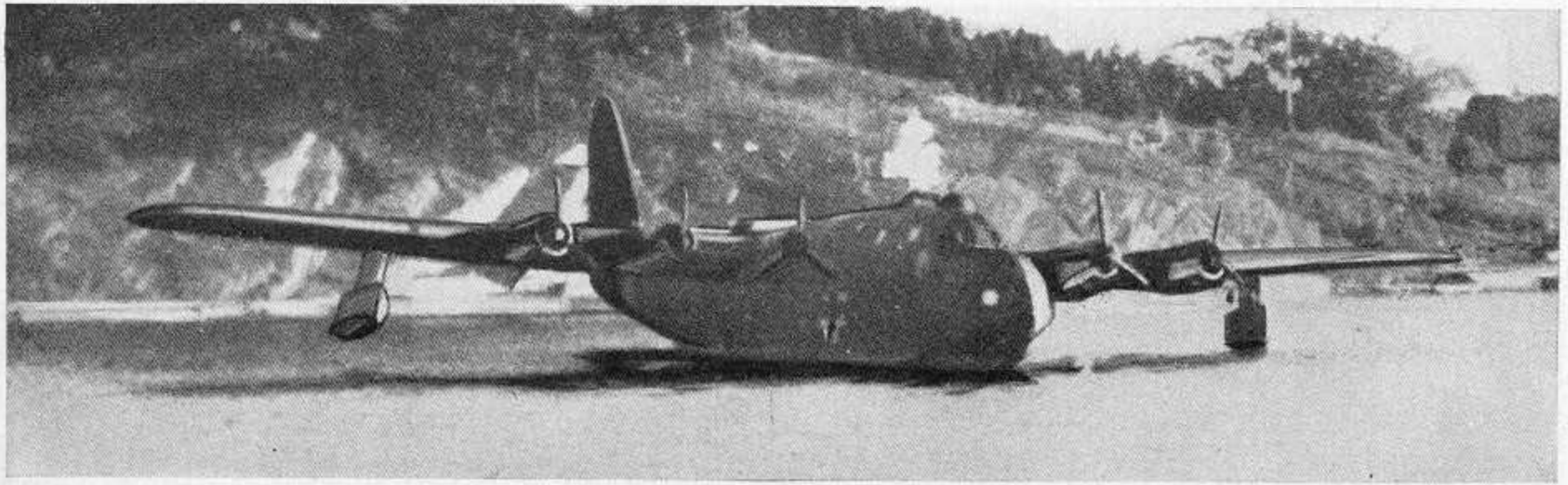
WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A



B

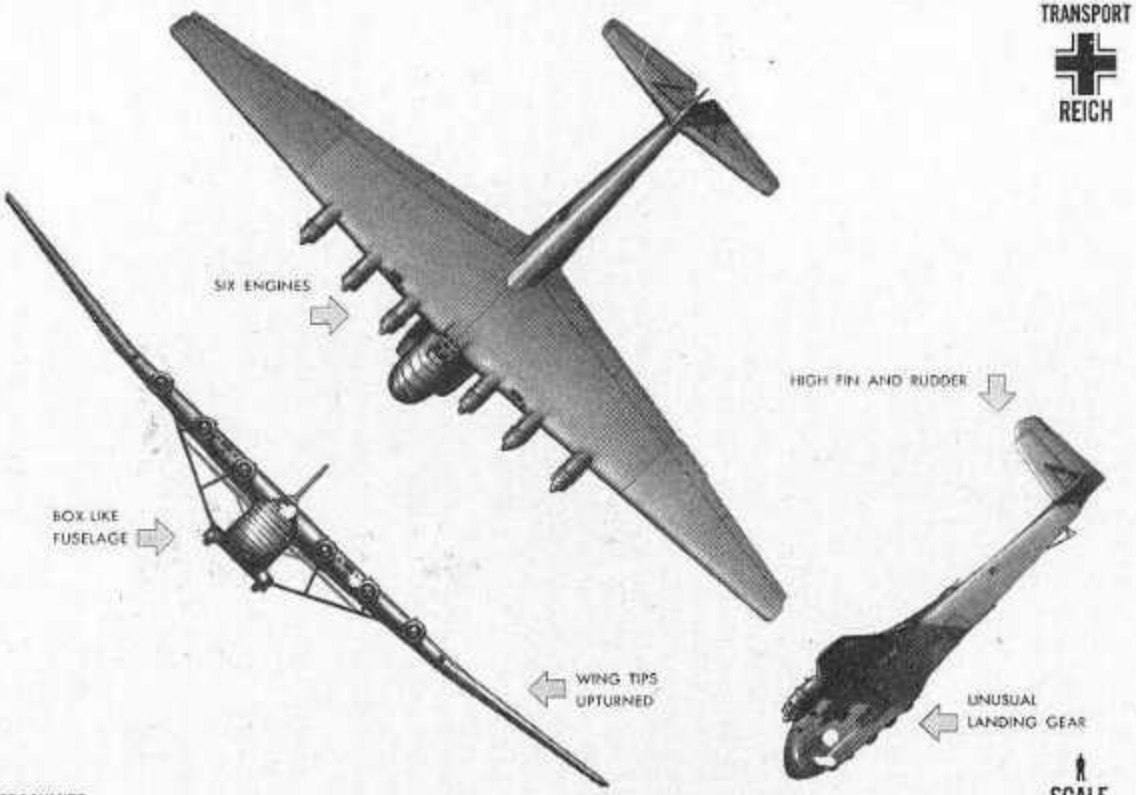


C

TRANSPORT

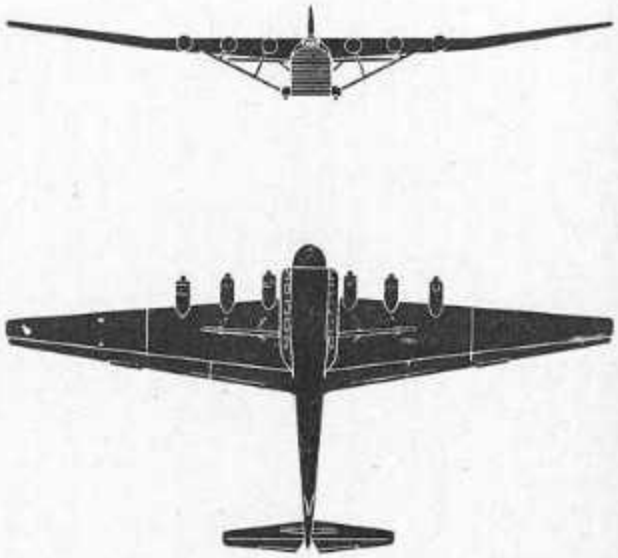
REICH

ME. 323



SCALE
6-FOOT MAN

MESSERSCHMITT
GERMANY



SPAN: 181 ft.

LENGTH: 93 ft. 4 in.

SERVICE CEILING: 21,000 ft.

APPROX. SPEED: 195 m. p. h. at 13,000 ft.

DISTINGUISHING FEATURES: Six-engine, high-wing monoplane. Very long strut-braced wings are tapered to small, squarish tips. Center section is very thick and has no dihedral. Long outer panels have marked dihedral. Nose-heavy, humpback fuselage tapers sharply aft of the wing. Landing gear consists of five wheels in tandem under each side of forward fuselage. Tailplane resembles wing in plan with cut-out in elevators. Extremely tall, narrow single fin and rudder has slightly tapered edges and round top.

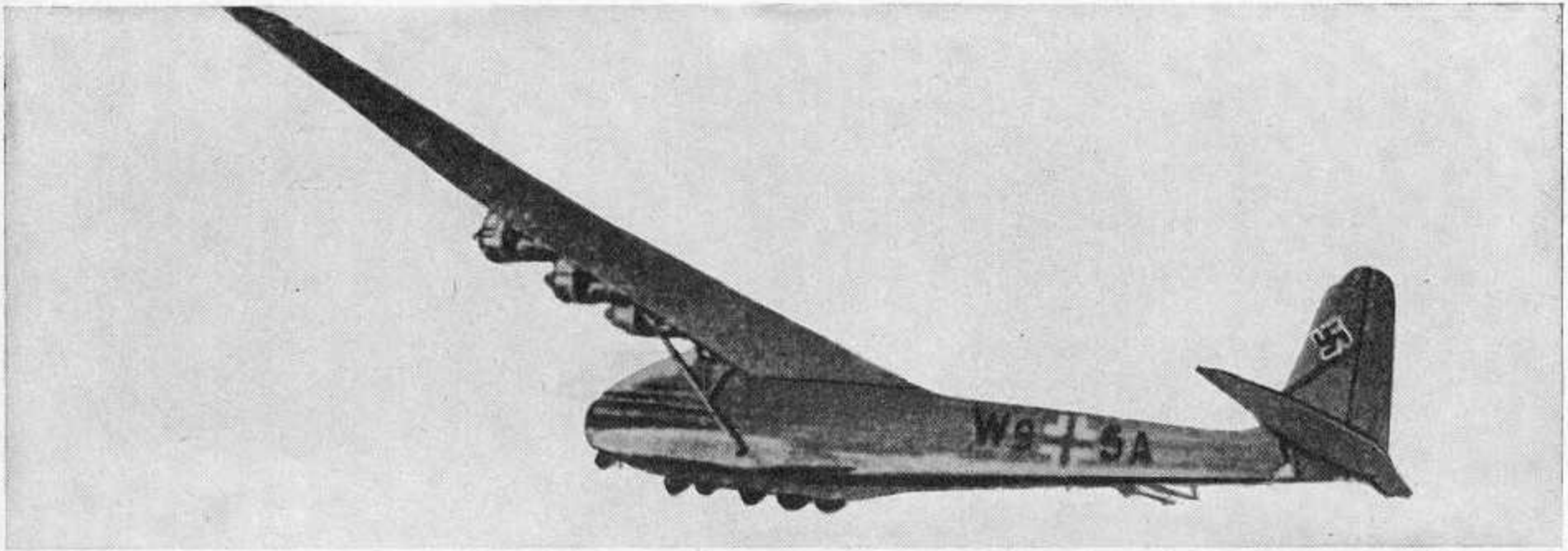
INTEREST: The Me. 323 is a modified, powered version of the Me. 321 "Gigant" glider. During the final stages of the Tunisian campaign, P–40 "Warhawks" completely destroyed a large formation of these giants attempting to land supplies for the besieged German troops. With a full military load of 130 troops or about 40,000 pounds of cargo, some sort of assisted take-off, either a tug or rockets, is believed to be used. The nose of the fuselage is made up of two very large doors which allow loading of heavy equipment.

RESTRICTED

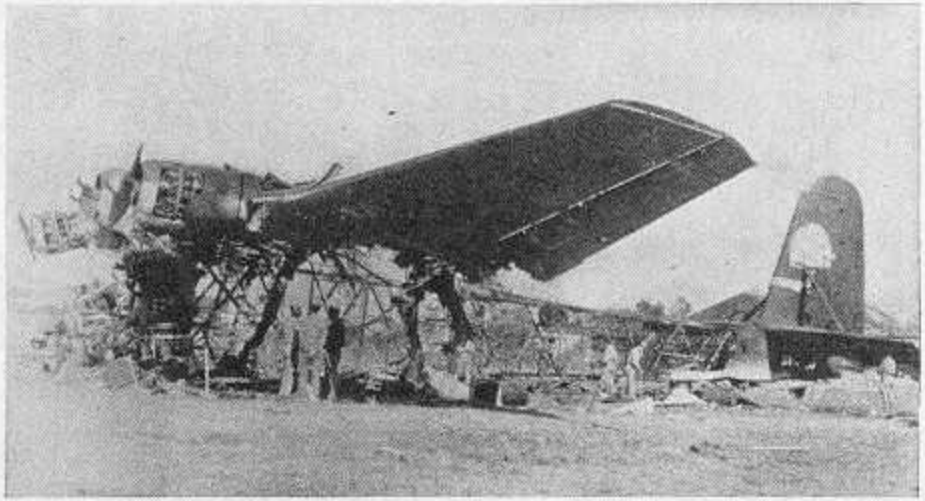
NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

A



B

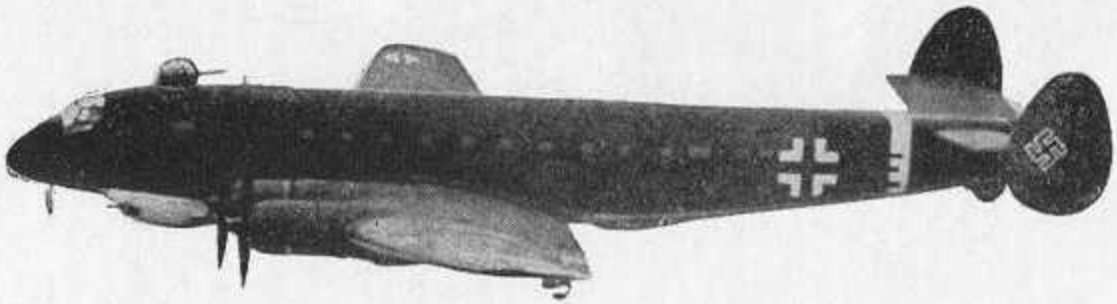


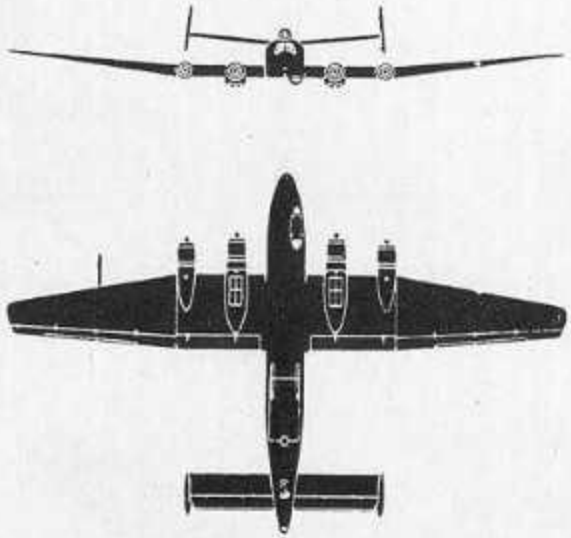
C

TRANSPORT

REICH

JUNKERS "JU. 290"





JU 290
JUNKERS
GERMANY

DISTINGUISHING FEATURES: Low-wing monoplane with four radial engines. Wing has rectangular center section and tapered outer section with raked tips. Dihedral in outer section. Long, low fuselage sweeps up aft. Long pointed nose with small offset gondola beneath. Twin fins and rudders. Rectangular stabilizer with dihedral.

INTEREST: Developed from the old Ju 90 transport. The principal duty of the Ju 290 has been as a transport and troop carrier. It has also been in service as a bomber and long-range shipping reconnaissance plane. They have seen service in the Mediterranean theater as well as over the Atlantic. Ju 290's have been equipped to carry the Henschel Hs 293 glider bomb, and may be seen with either oval or angular fins and rudders. As a troop carrier it can carry up to 90 men.

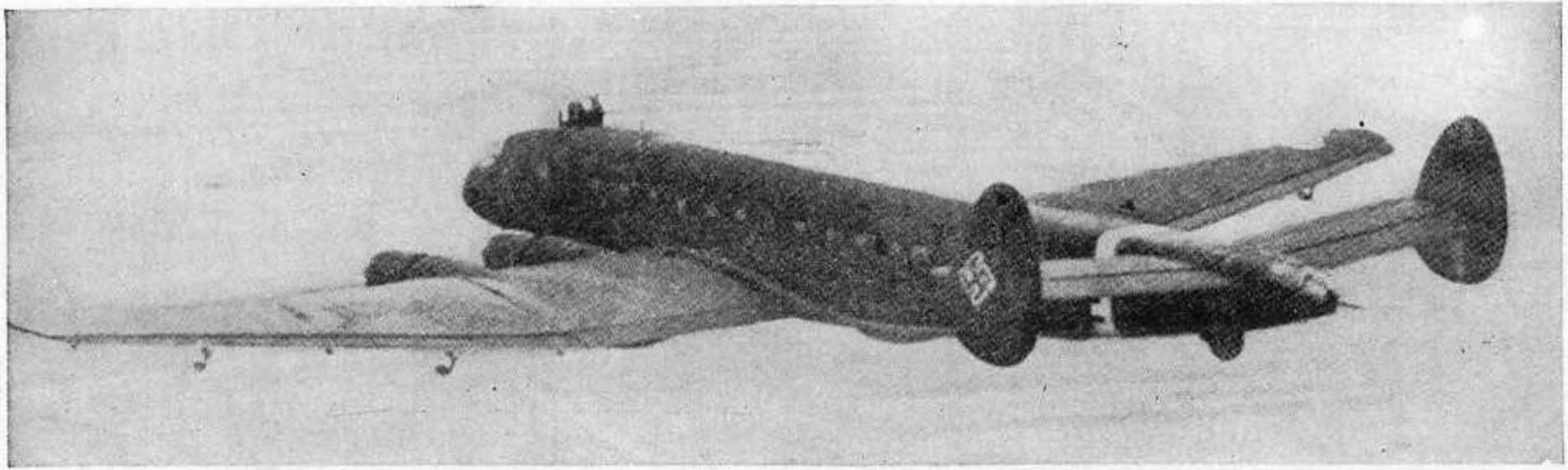
SPAN: 138 ft. 0 in.
LENGTH: 92 ft. 10 in.
MAX. SPEED: 246 m.p.h. at 18,000 ft.
SERVICE CEILING: 26,000 ft.

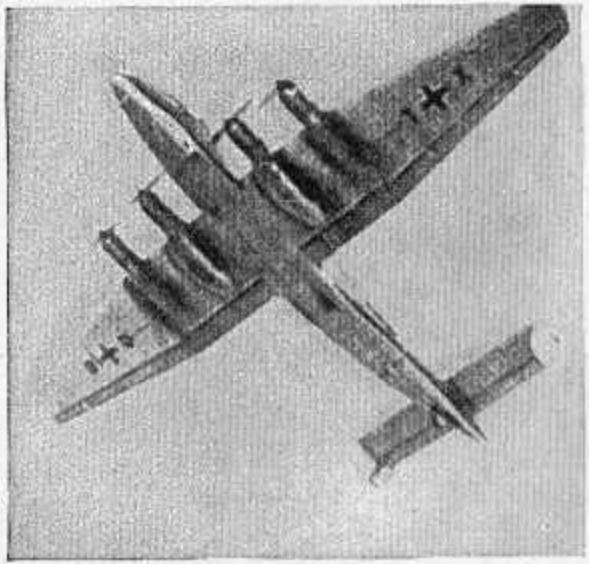
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

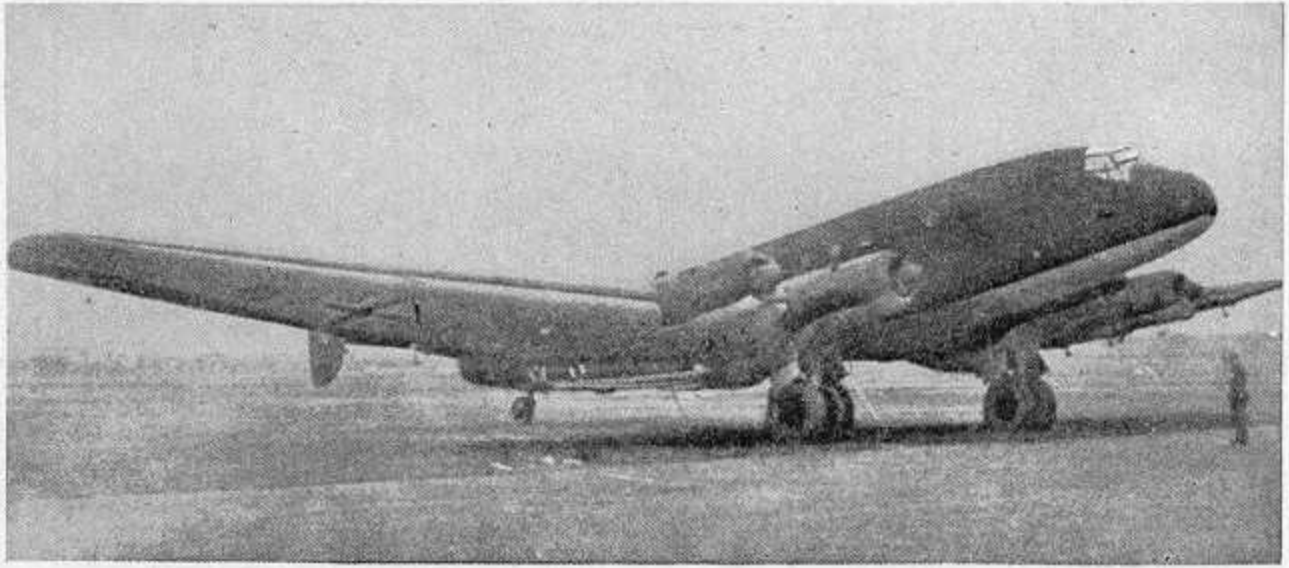
RESTRICTED

A





B



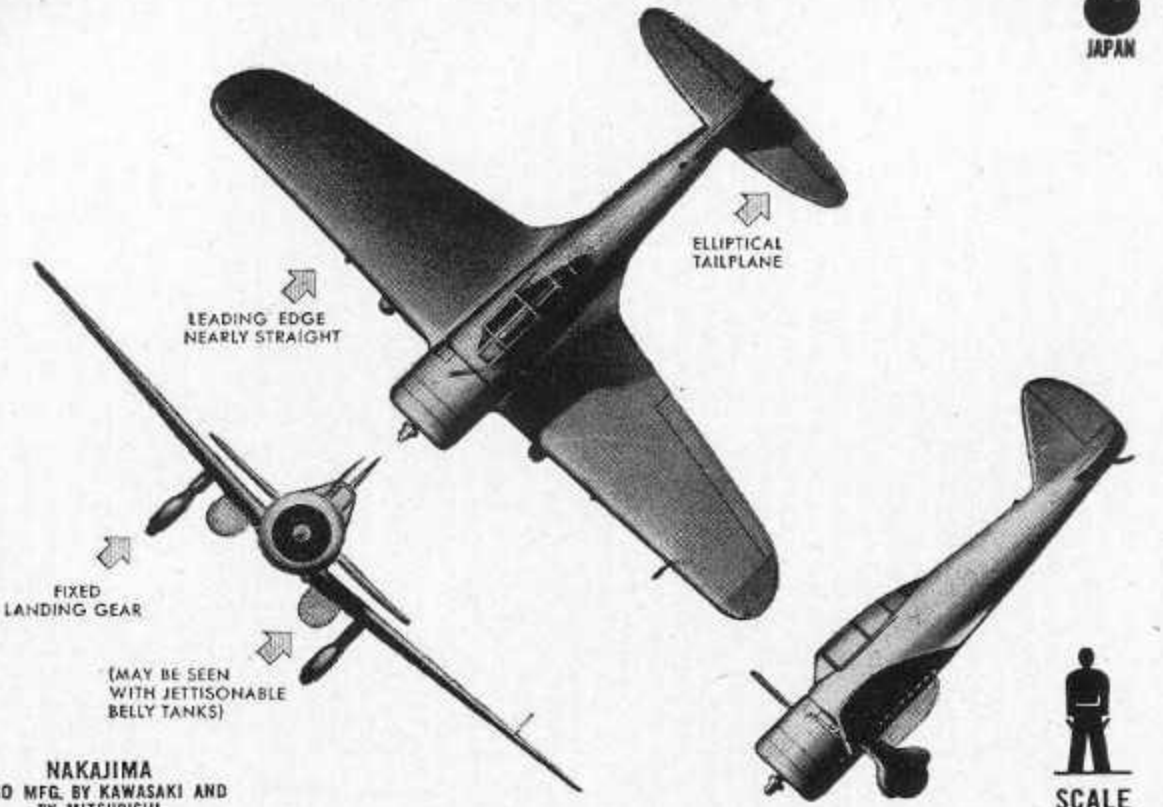
C

JAPANESE AIRCRAFT

FIGHTER

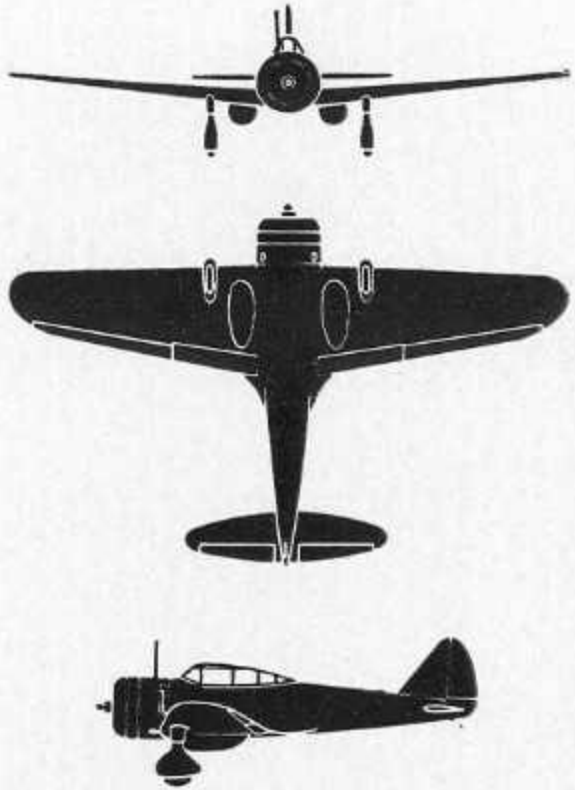
JAPAN

"NATE" TYPE 97 F



SCALE
6-FOOT MAN

NAKAJIMA
ALSO MFG. BY KAWASAKI AND BY MITSUBISHI
JAPAN



SPAN: 35 ft. 10 in.
LENGTH: 24 ft. 4 in.
APPROX. SPEED: 280 m. p. h. at 13,000 ft.

SERVICE CEILING: 33,000 ft.

DISTINGUISHING FEATURES: Single radial engine low-wing monoplane. Wings have full dihedral. Both edges tapered with more pronounced taper on the trailing edge. Trailing edge fairs into fuselage. Stubby round nose. Two fuel tank bulges show below wings. Fuselage tapers back to tapered fin with oval rudder. Elliptical stabilizer and elevator. Fixed landing gear with wheel fairings. Rudder ends above fuselage.

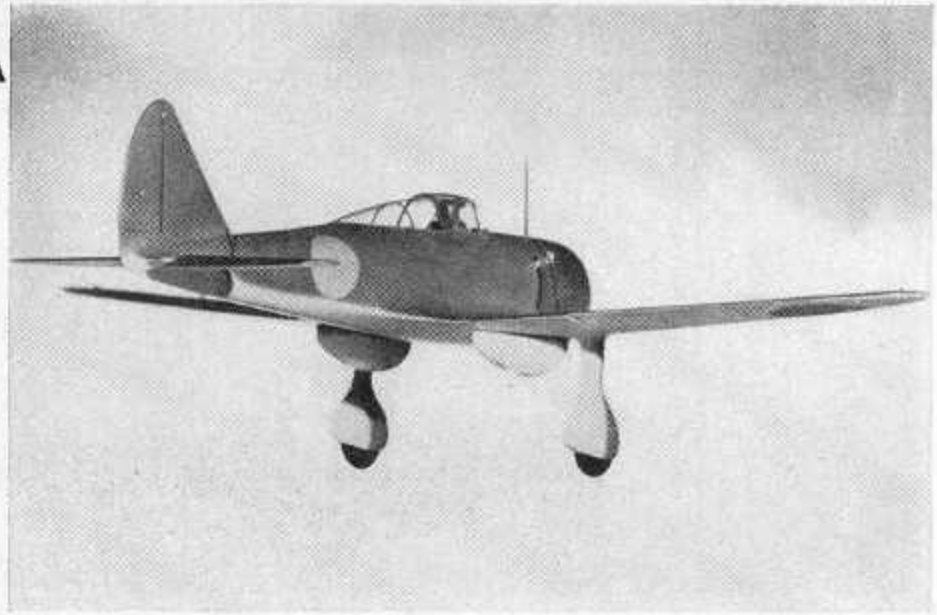
INTEREST: This single seat Japanese fighter has a high rate of climb and good maneuverability. Aircraft has nonretractable landing gear. As is the case with "Zeke," fuel tanks are not self-sealing. "Nate" has no armor protection for the pilot. Its armament consists of four 7.7-mm. machine guns. The type 1 SSF "Oscar" is probably a development of "Nate."

APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

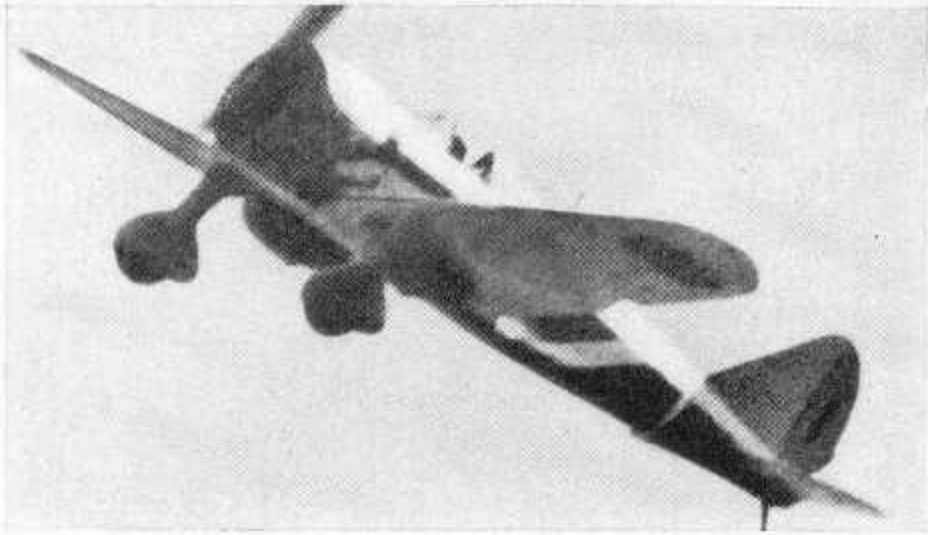
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

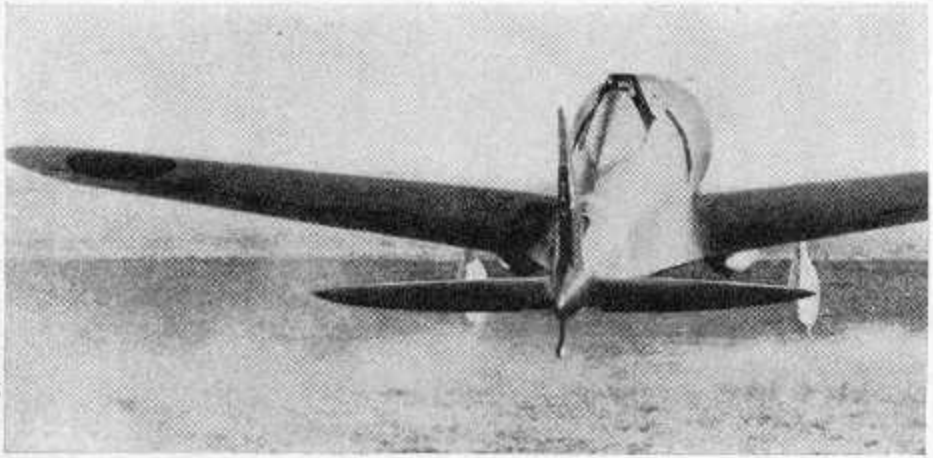
A



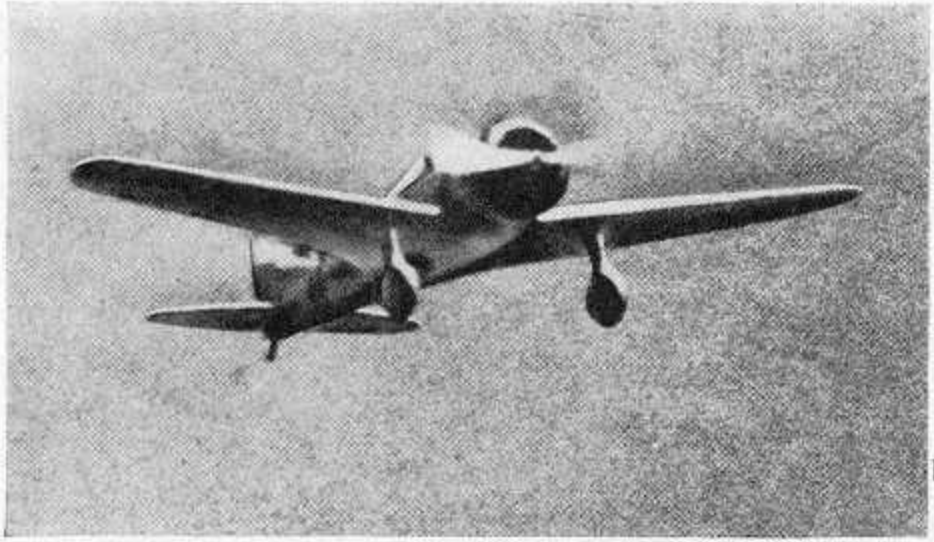
C



B



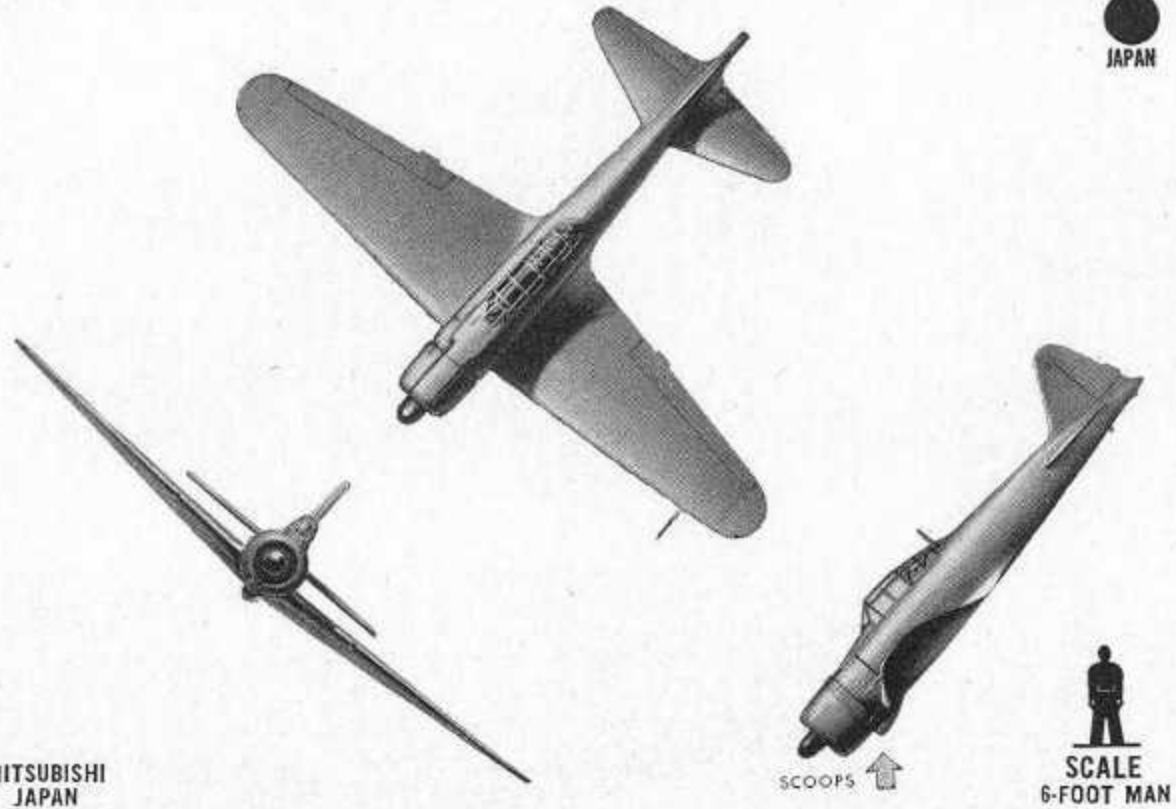
D



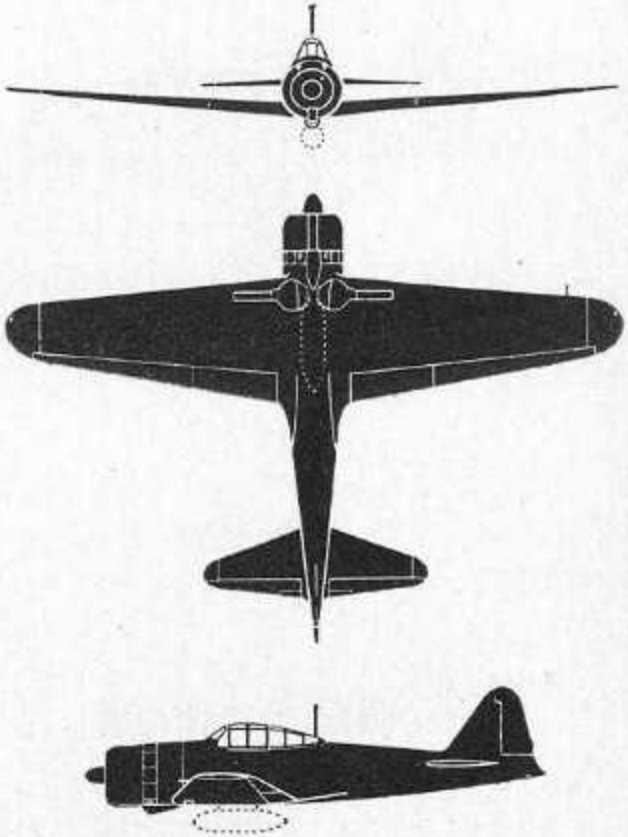
FIGHTER

JAPAN

"ZEKE" (ZERO) TYPE 0 MK. 1 F



SCALE
6-FOOT MAN



MITSUBISHI
JAPAN

DISTINGUISHING FEATURES: Radial engine, low-wing monoplane. Wings have dihedral from the roots with nearly equal taper and rounded tips. Round nose with medium large spinner. Air scoops for oil cooler and carburetor show below cowling. Fuselage tapers back neatly to a point in rear of tail assembly. Cockpit canopy sits on top of fuselage. Rather large fin and rudder has pronounced taper on leading edge and slight taper on trailing edge.

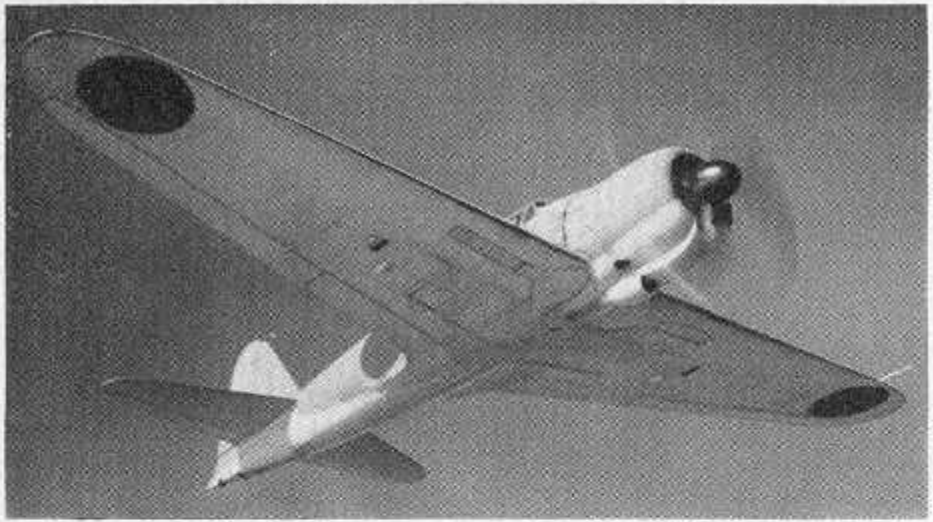
INTEREST: This famous Japanese fighter, popularly known as the Zero and much respected by U. S. fliers, is the one most frequently shot down. Although "Zeke" is well built, its speed and maneuverability were obtained by light wing loading, largely through the omission of armor. Our fliers quickly found "Zeke's" weakness: no armor protection for pilots or fuel tanks. It has a steep angle of climb, and favors climbing tactics, but above 300 m. p. h., the aircraft is very difficult to roll.

SPAN: 39 ft. 5 in.
LENGTH: 30 ft. 3 in.
APPROX. SPEED: 326 m. p. h. at 16,000 ft.
SERVICE CEILING: 38,500 ft.

RESTRICTED

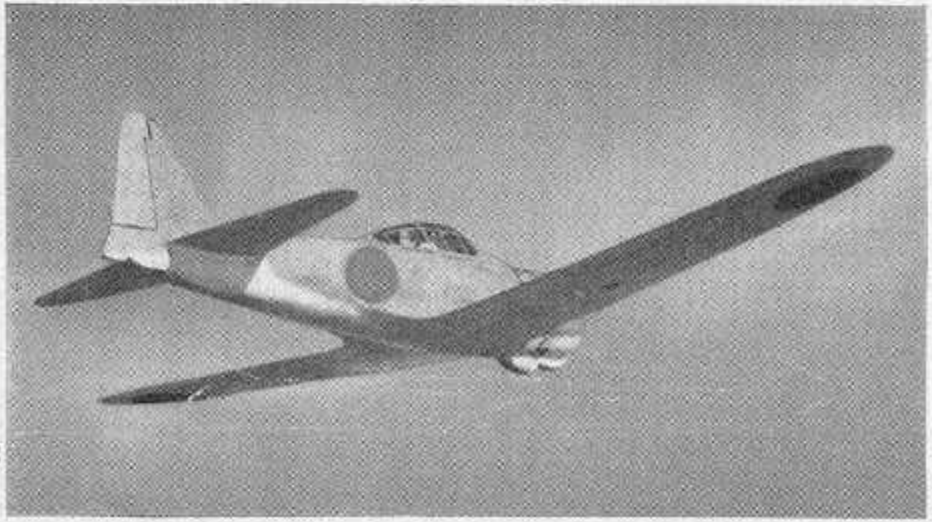
APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

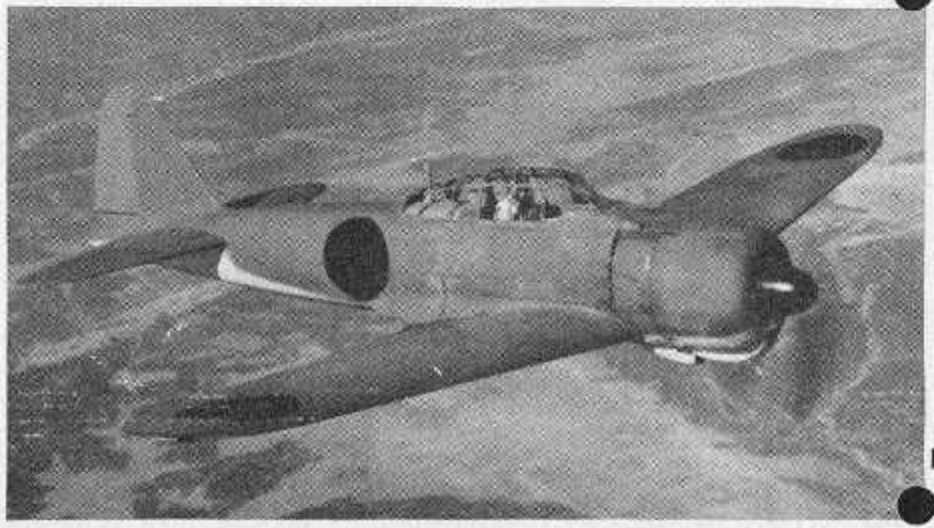


A

C



B



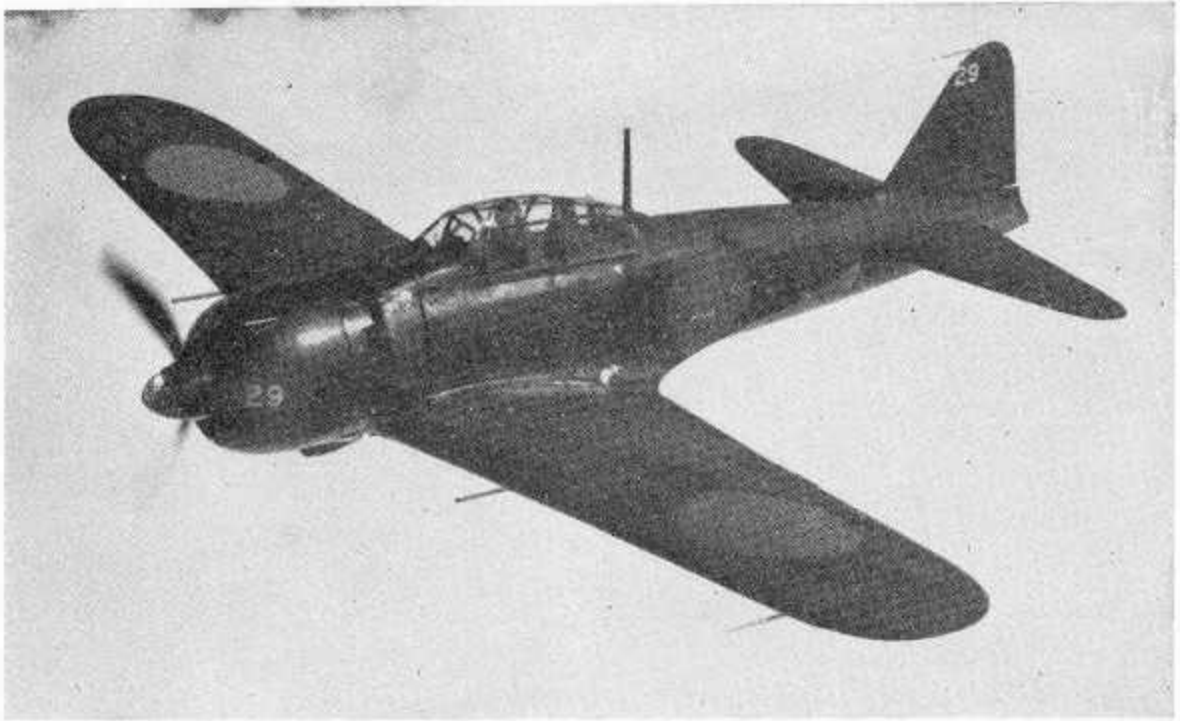
D

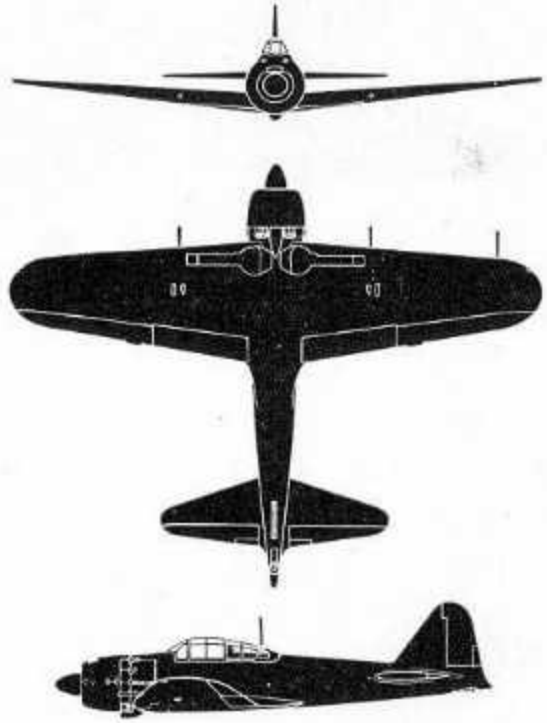
NAVY
MITSUBISHI
JAPAN

FIGHTER

JAPAN

ZEKE





DISTINGUISHING FEATURES: Single radial engined, low-wing monoplane. Recognitionally, Zeke 52 is very similar to Zeke 32 (Hamp), the main difference being the rounded wing tips. Sleek, clean fuselage lines broken on top by raised, blisterlike cockpit canopy. Wing and tailplane are broad and nearly equitapered. Large, tapered fin and rudder fairs into point at tail. Prominent rounded spinner projects from short nose.

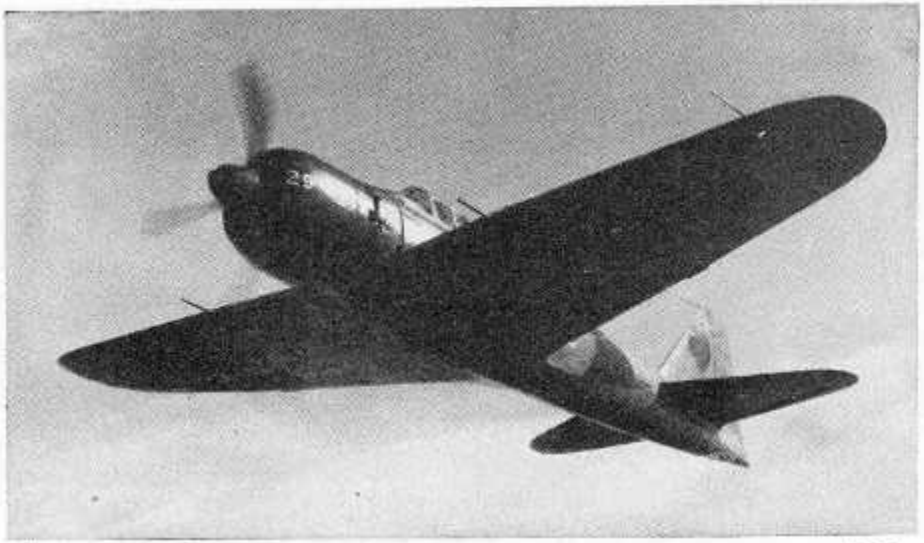
INTEREST: Zeke 52 has replaced all previous models of this famous series of Jap single-engine fighters. It is numerically the most important Jap Navy fighter at present and should remain so until the newer fighters get into quantity production. Following the usual Zeke pattern, it is highly maneuverable and has a good rate of climb at low altitudes. Although an improvement over former models, Zeke 52 is still not up to the standard of U. S. Navy carrier-based fighters.

SPAN: 36 ft. 2 in. **SERVICE CEILING:** 35,100 ft.
LENGTH: 29 ft. 9½ in.
APPROX. MAX. SPEED: 358 mph at 22,000 ft.

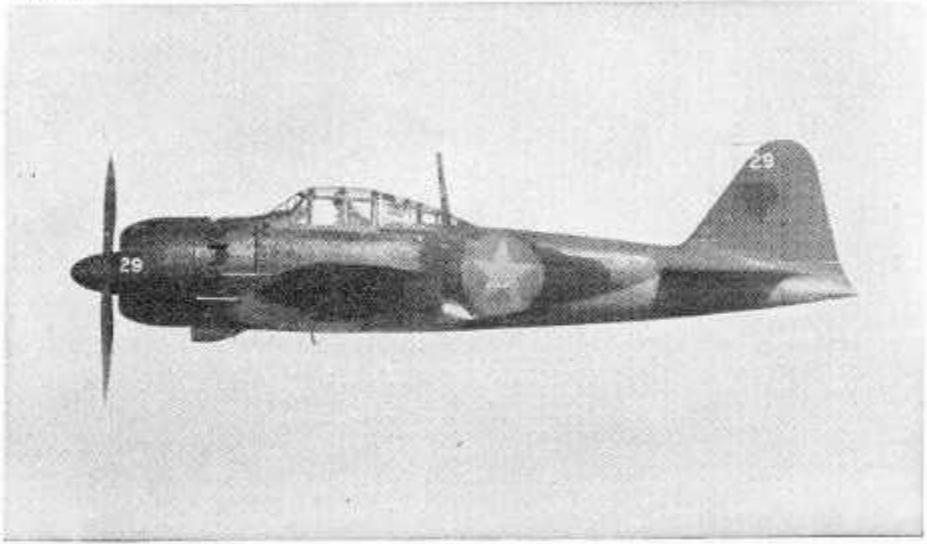
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

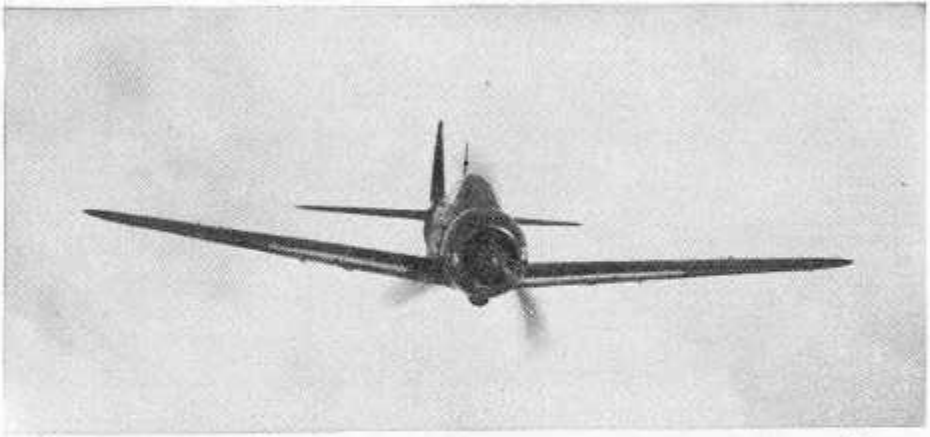
SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

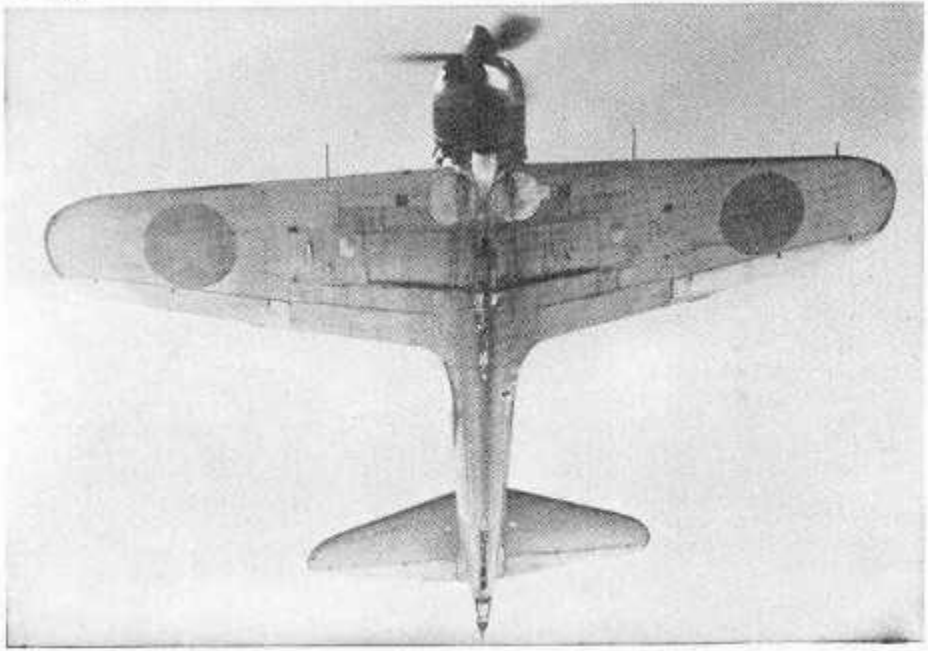


A ▲ B ▼





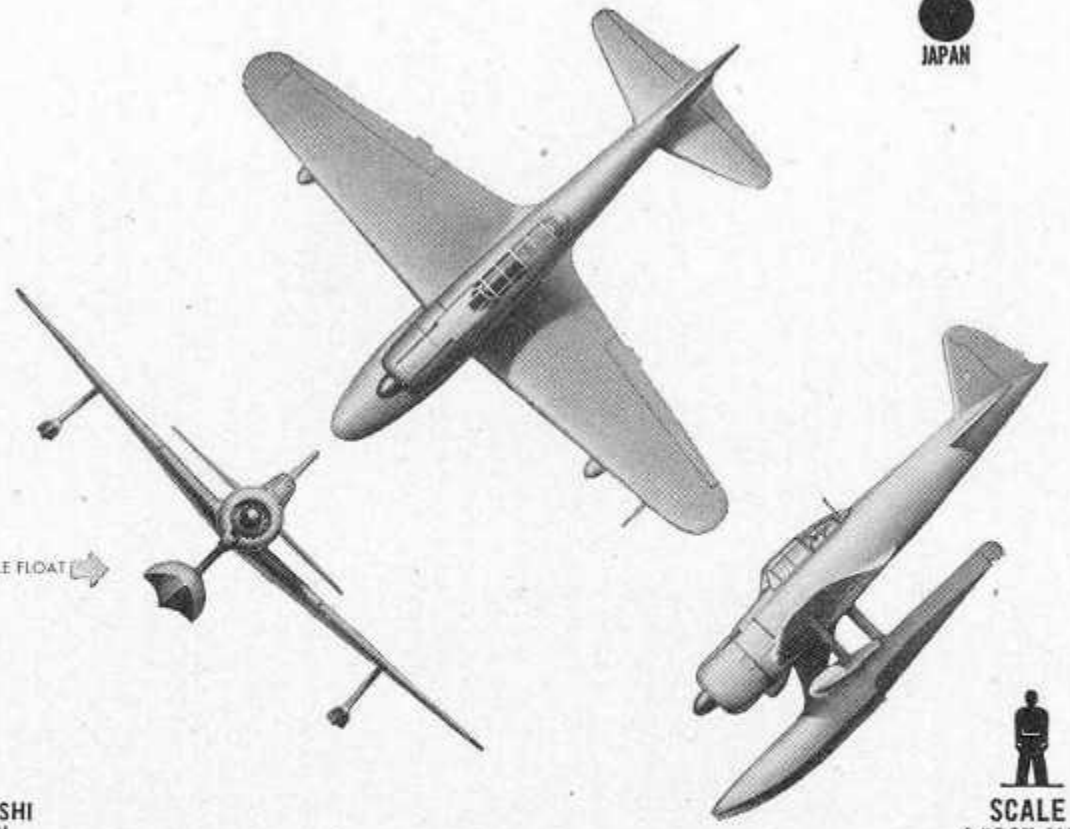
C ▲ D ▼



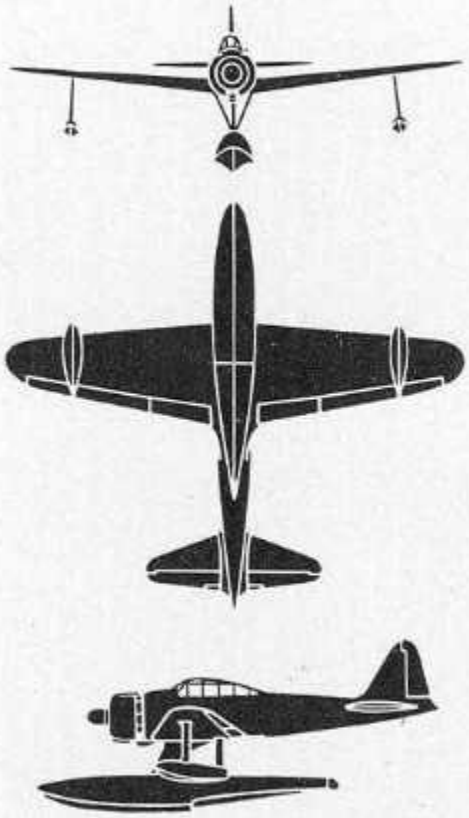
FIGHTER–RECONNAISSANCE

JAPAN

"RUFE" TYPE 0 MK.1 F-F/P



SCALE
6-FOOT MAN



MITSUBISHI
JAPAN

DISTINGUISHING FEATURES: Same as Type "O" SSF "Zeke" except for large central pontoon and wing-tip floats. Radial engine low-wing monoplane. Wings have dihedral from the roots with nearly equal taper and rounded tips. Round nose with medium large spinner. Oil cooler scoop and carburetor air scoop show below cowling. Fuselage tapers neatly back to a point in the rear of tail assembly. Cockpit canopy sits on top of fuselage. Rather large fin and rudder with pronounced taper to leading edge and slight taper to trailing edge.

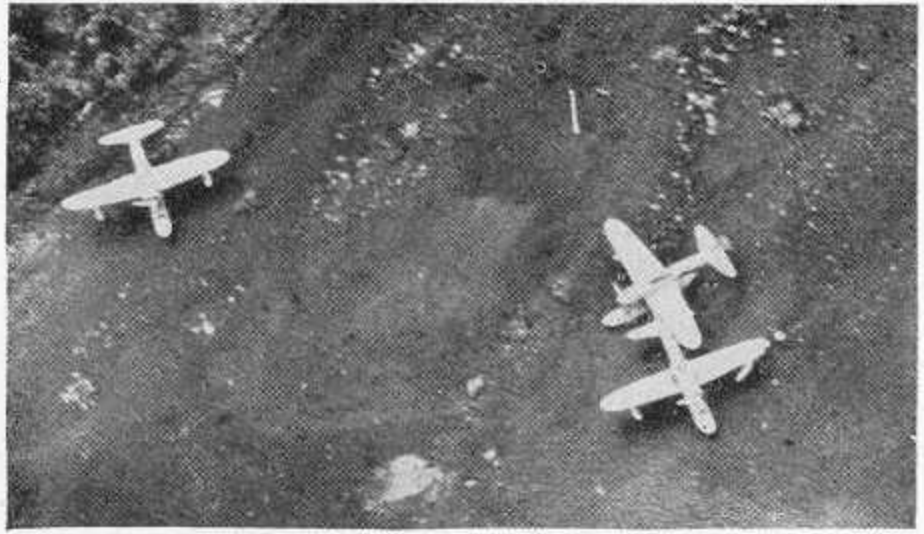
INTEREST: The float plane version of the Zero, "Rufe" is also manufactured by Mitsubishi. The additional drag and weight of the floats are responsible for a decrease in speed of approximately 50 miles an hour. In other respects the float plane approximates the well-known "Zeke," although less maneuverable.

SPAN: 39 ft. 5 in.
LENGTH: 34 ft. 10 in.
APPROX. SPEED: 277 m. p. h. at 15,200 ft.
SERVICE CEILING: about 36,500 ft.

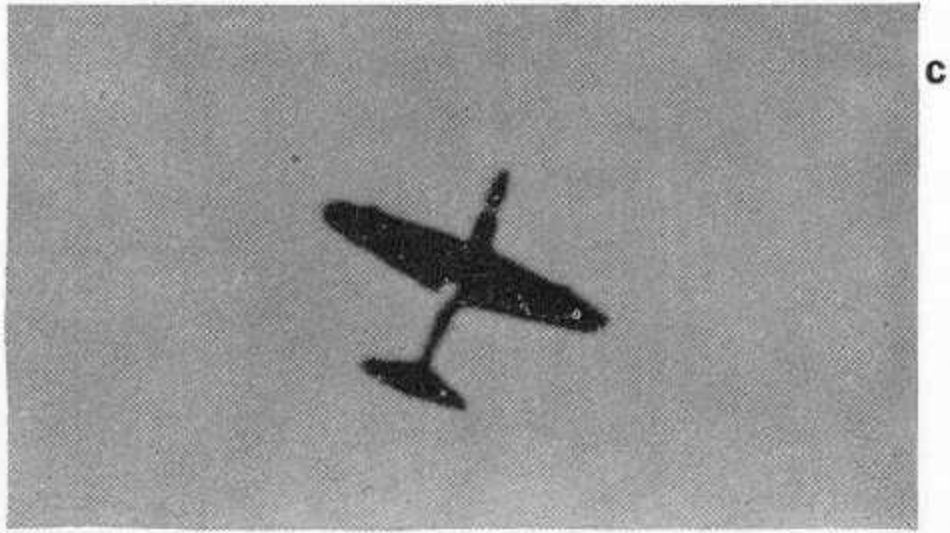
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

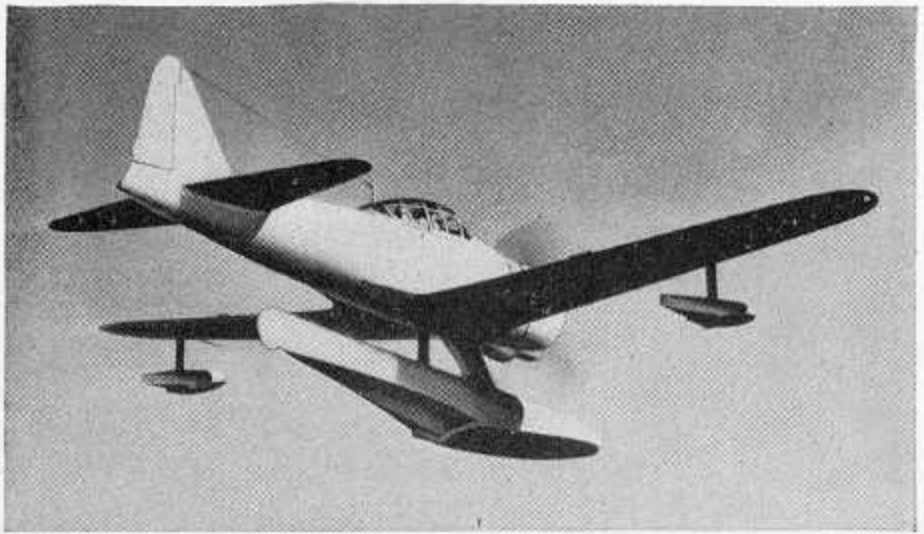
RESTRICTED



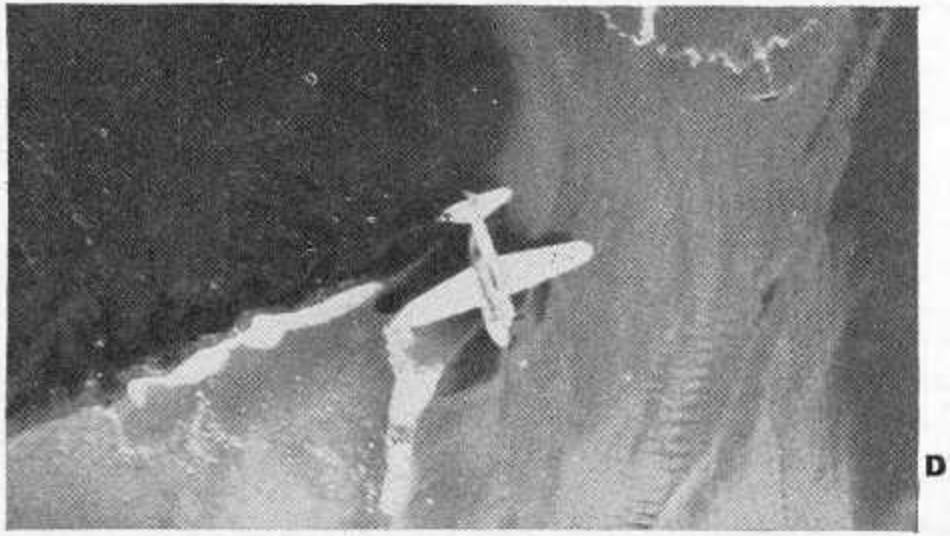
A



C



B

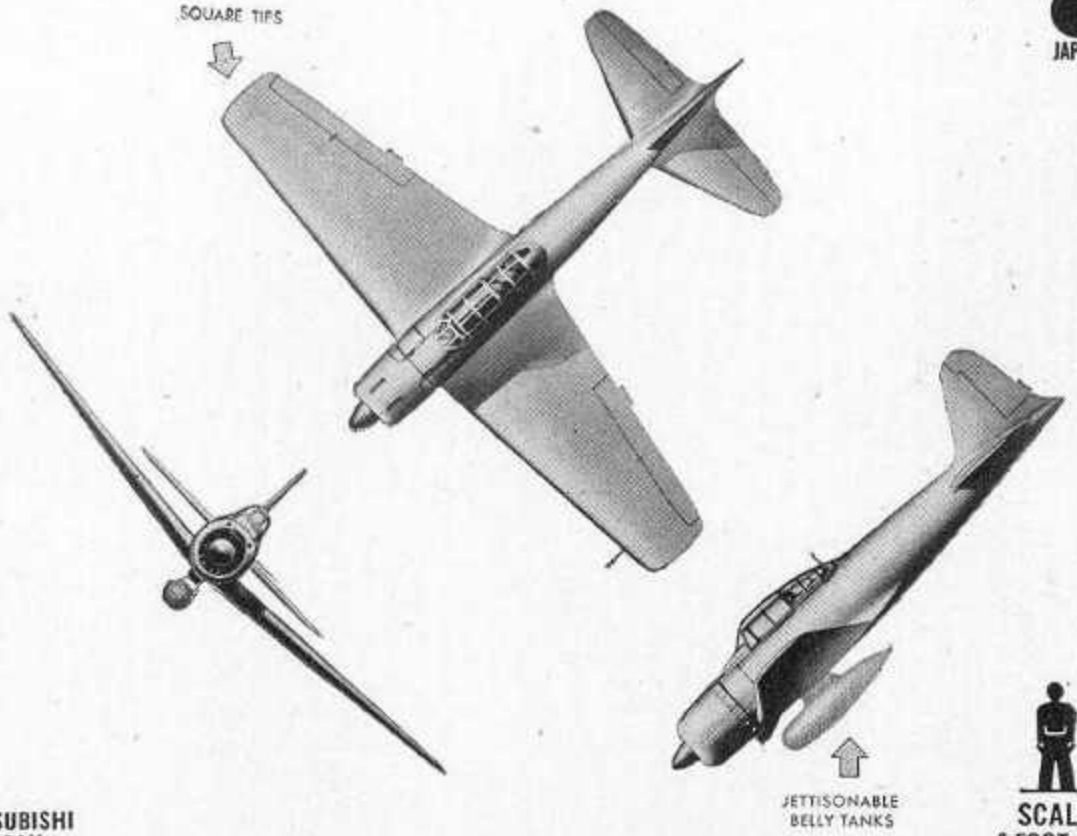


D

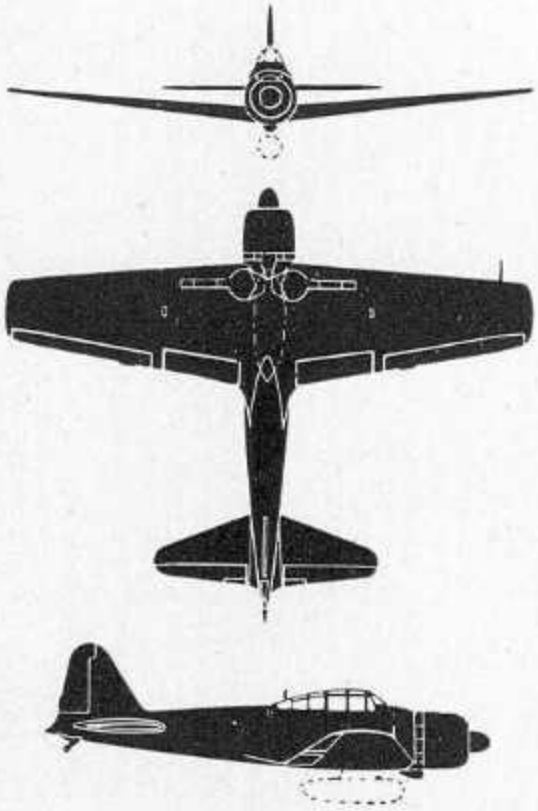
FIGHTER

JAPAN

"HAP" TYPE 0 MK.2 F



SCALE
6-FOOT MAN



MITSUBISHI
JAPAN

DISTINGUISHING FEATURES: Single radial engine low-wing monoplane. Similar to "Zeke" but with square wing tips and air scoop inside and at top of cowling.

INTEREST: This fighter appears to be more maneuverable than "Zeke." Its rate of climb is estimated to be 2,800 ft. per minute. The aircraft carries two 7.7-mm. machine guns, synchronized to fire through the propeller and two 20-mm. cannon, fixed, are in each wing. "Hap" is apparently a Mark II of "Zeke," with the folding wing tips removed and replaced by a blunt fairing. The position of the air scoop has also been changed, it now being in the top forward edge of the cowling instead of on the outside of the bottom of the cowling. The engine is a Nakajima "Sakae 21" instead of the Nakajima "Sakae 12" in "Zeke," and may develop more horsepower than the "Sakae 12."

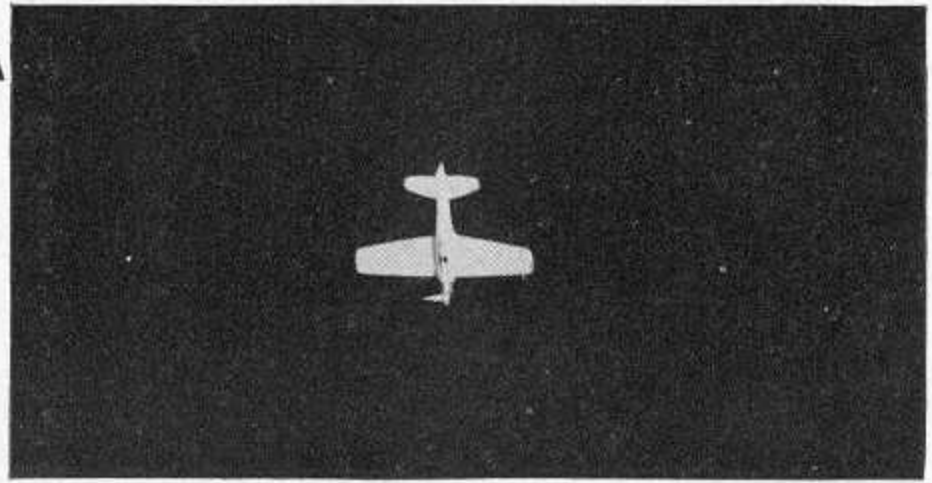
SPAN: 36 ft.
LENGTH: 28 ft.
APPROX. SPEED: 338 m. p. h. at 17,200 ft.
SERVICE CEILING: 38,800 ft.

RESTRICTED

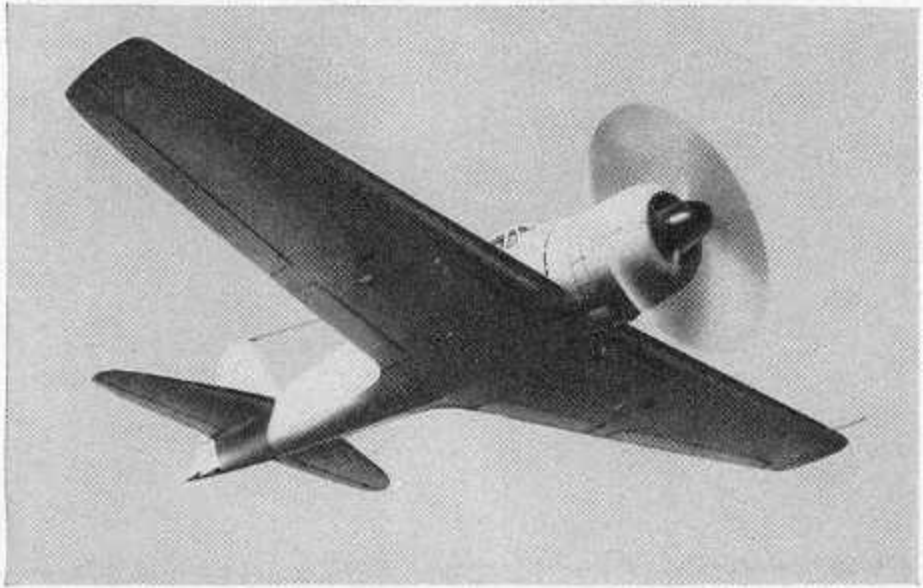
APRIL, 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

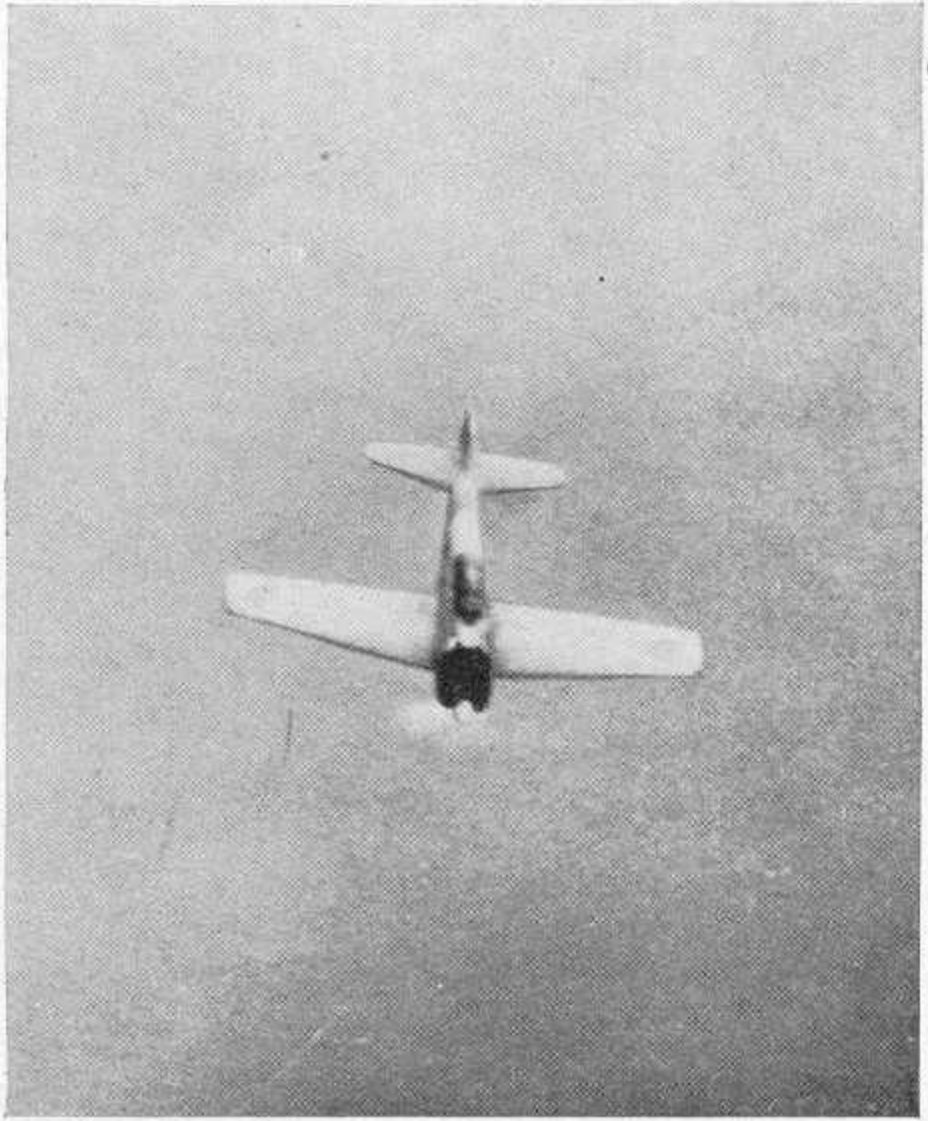
A



B



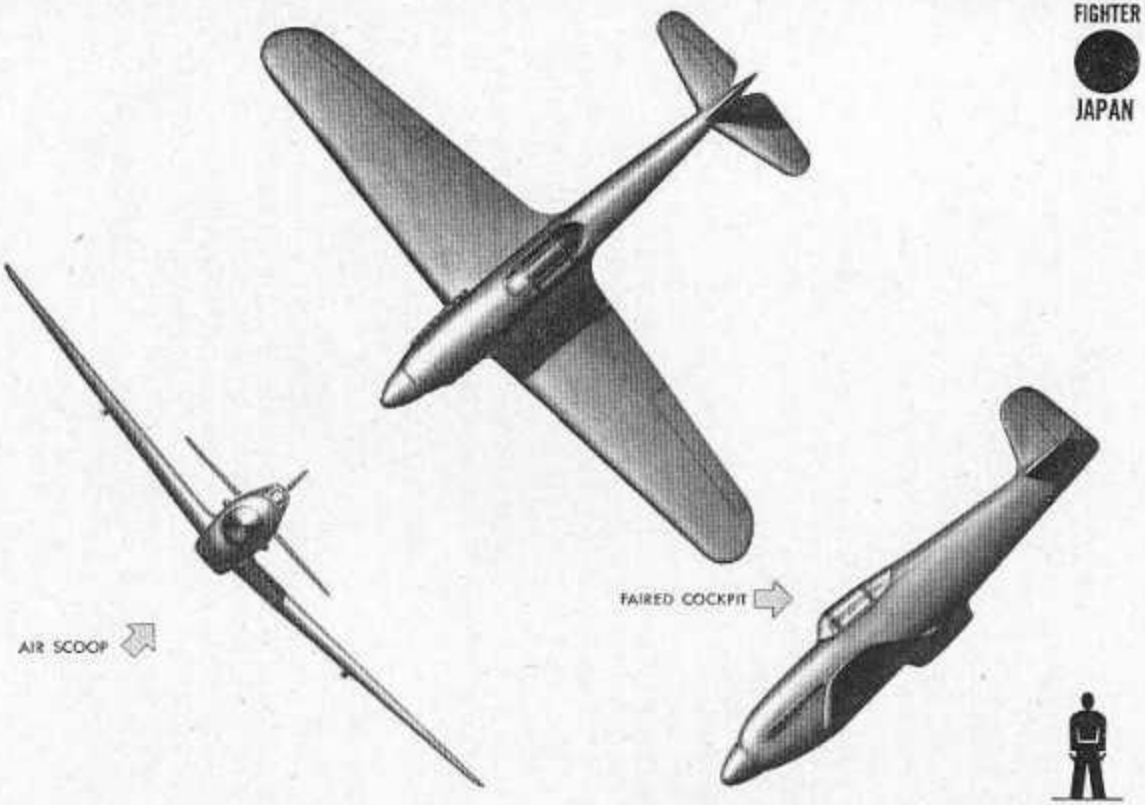
C

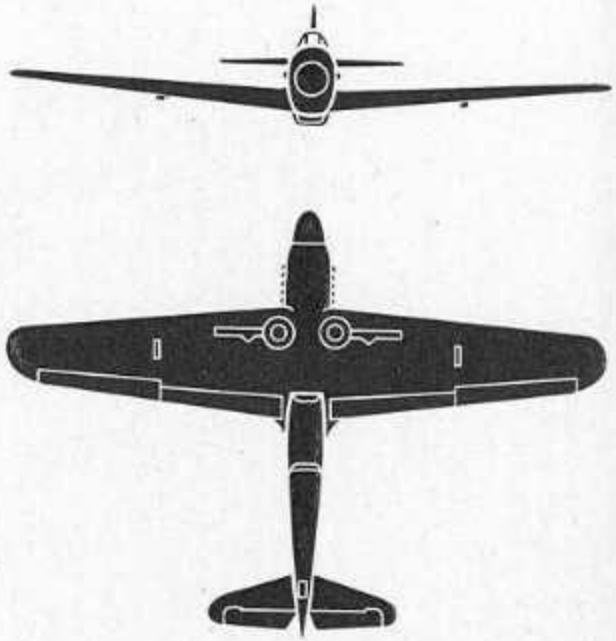


FIGHTER

JAPAN

TONY





SCALE
6-FOOT MAN

JAPAN

DISTINGUISHING FEATURES: Single inline engine, low-wing monoplane. Wings have dihedral from roots and moderate taper on both edges. Long nose. Small cockpit faired into the fuselage. Large airscoop extends beyond trailing edge of wing. Bell-shaped fin and rudder. Tailplane has rounded tips, tapered leading edge and V cut-out in the elevator.

INTEREST: Fuselage and tail assembly of this single-seat Jap fighter are similar to the He 113. Wings longer and narrower. For the first time, armor plate placed behind the pilot was found in a Jap fighter. Power plant is a 12-cylinder 60° V-type liquid-cooled engine. Est. hp. is 1,060 at 15,000 ft. Fuel tanks, in fuselage and wing roots, are leak-proof. Armament: 2 x 12.7 mm. machine guns firing through propeller, 2 x 7.7 mm. machine guns in wings. Provision is made for cannon installation in propeller hub.

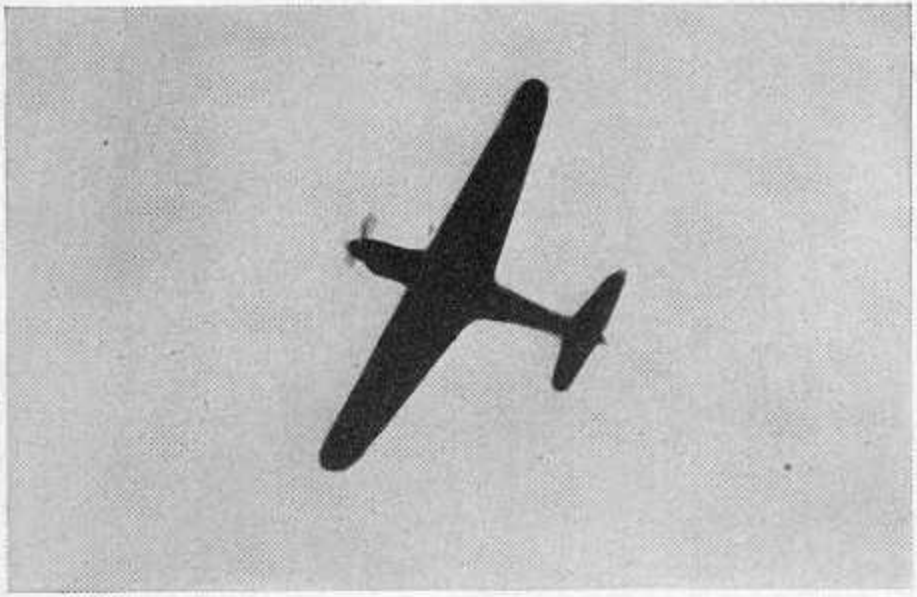
SPAN: 38 ft. 5 in.
LENGTH: 30 ft.
ESTIMATED SPEED: 363 m. p. h. at 17,000 ft.
SERVICE CEILING: 35,700 ft.

RESTRICTED

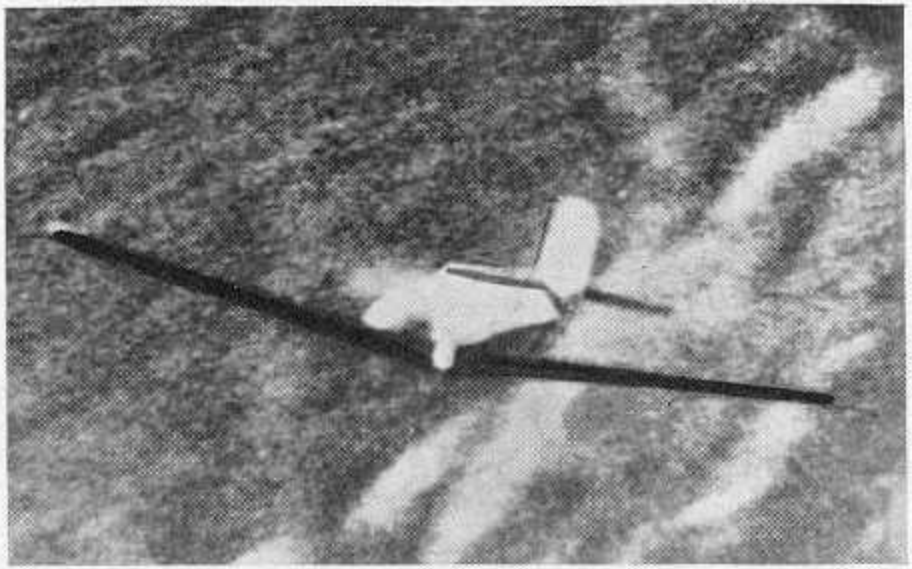
NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

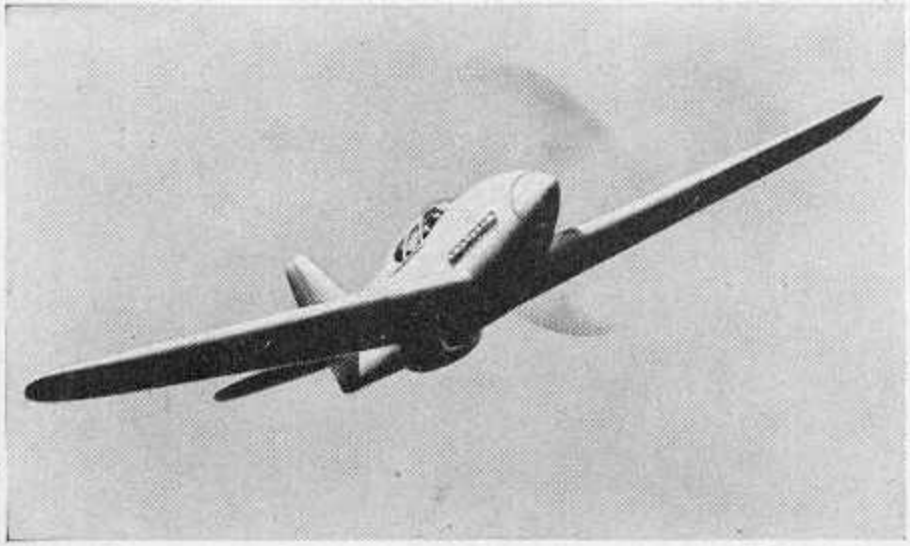
A



C



B

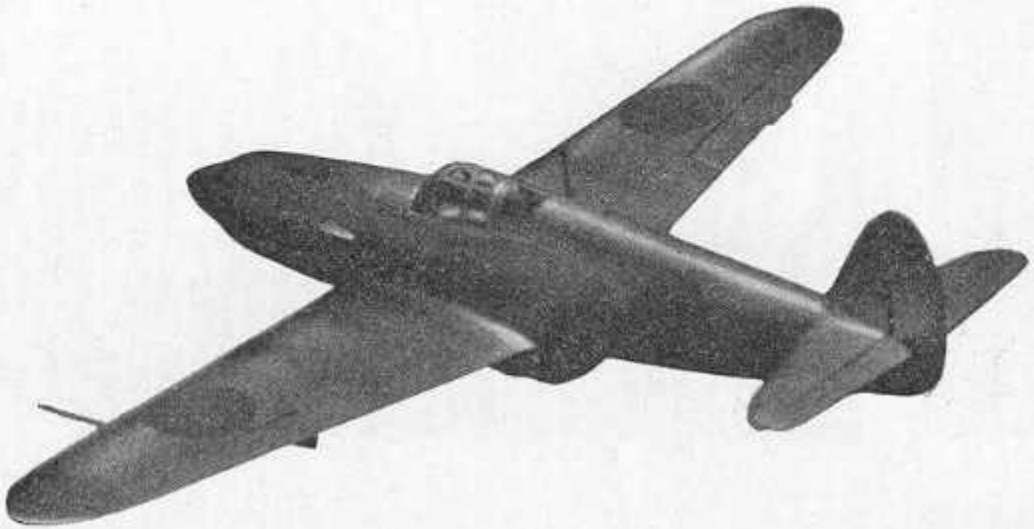


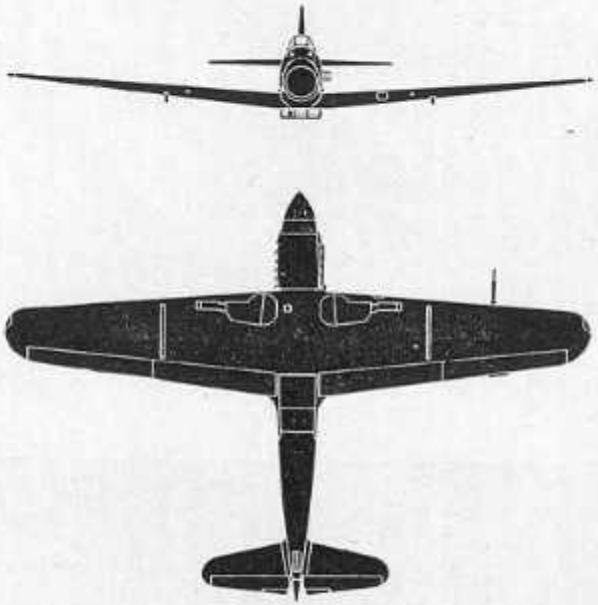
D

FIGHTER

JAPAN

TONY





ARMY
KAWASAKI
JAPAN

DISTINGUISHING FEATURES: Single in-line engine, low-wing monoplane with single fin and rudder. Has large spinner which fits snugly in cowling, giving a pointed appearance to nose. Cockpit is set well back and fairs smoothly into fuselage. Prominent feature is large radiator on ventral side of fuselage. Tapered fin and rounded rudder. Wings and stabilizer have double taper with well-rounded tips. Fuselage oval, with scoop evident from head-on view. Slight dihedral to wings. Stabilizer set high.

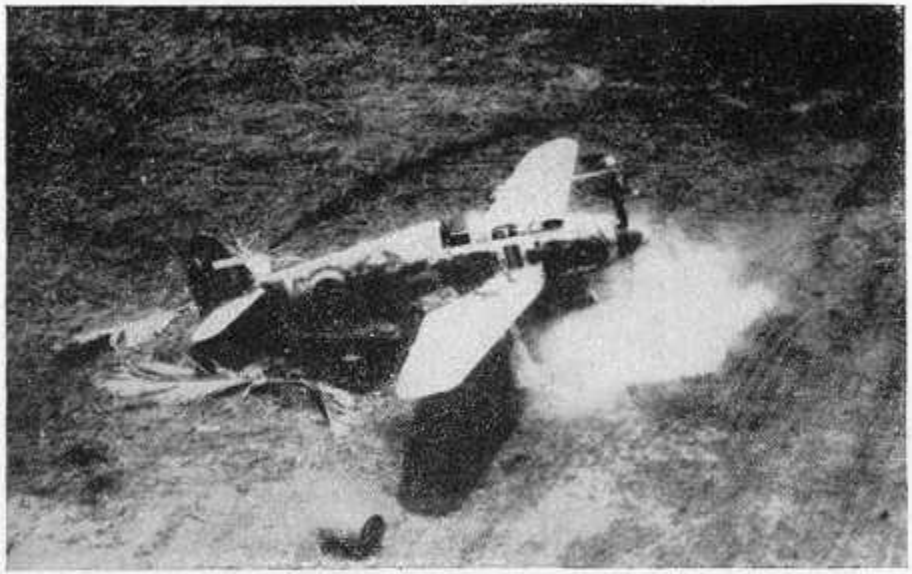
INTEREST: Tony is the only Jap single-seat fighter to employ liquid-cooled engine. Has great resemblance to Allied aircraft, especially Hurricane and P-40. A very good fighter, heavily armored and well protected. 2 x 12.7 mm machine guns synchronized and 2 x 20 mm cannon in wings. Study well.

SPAN: 39 ft. 4 in.
LENGTH: 30 ft. 0 in.
MAX. SPEED: 356 m.p.h. at 17,000 ft.
SERVICE CEILING: 35-100 ft.

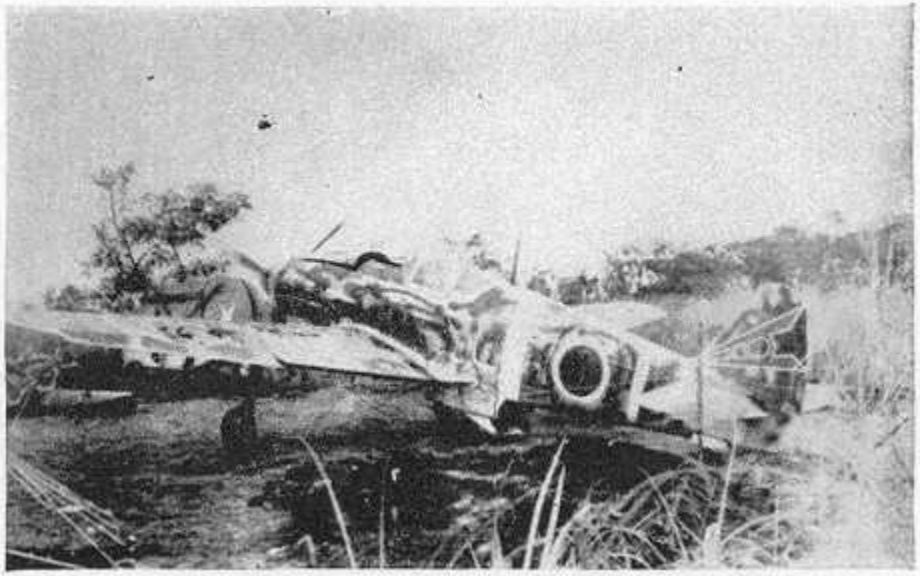
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

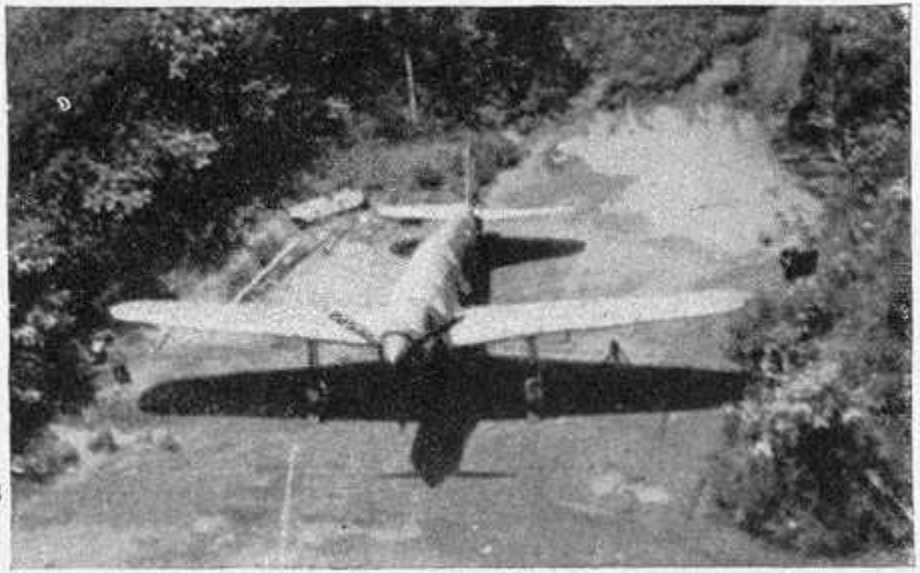
A



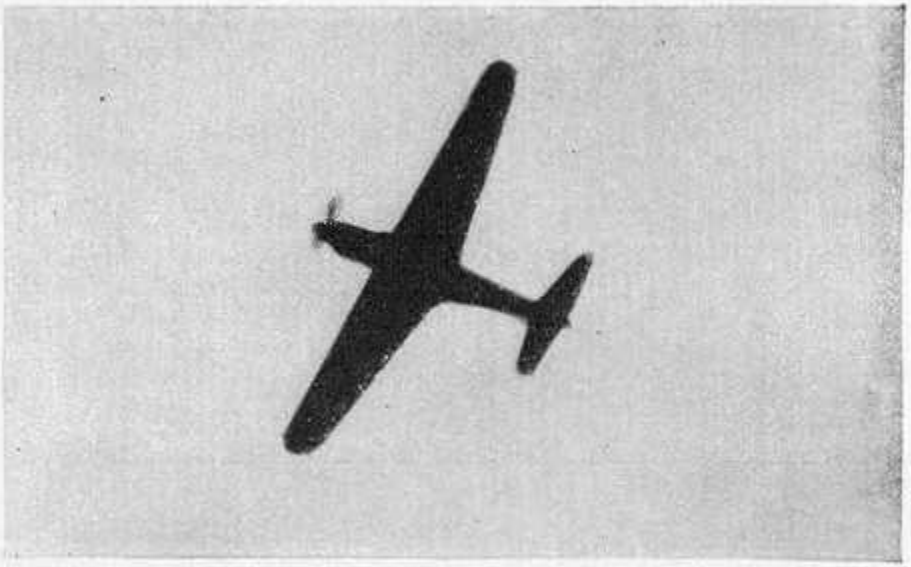
C



B



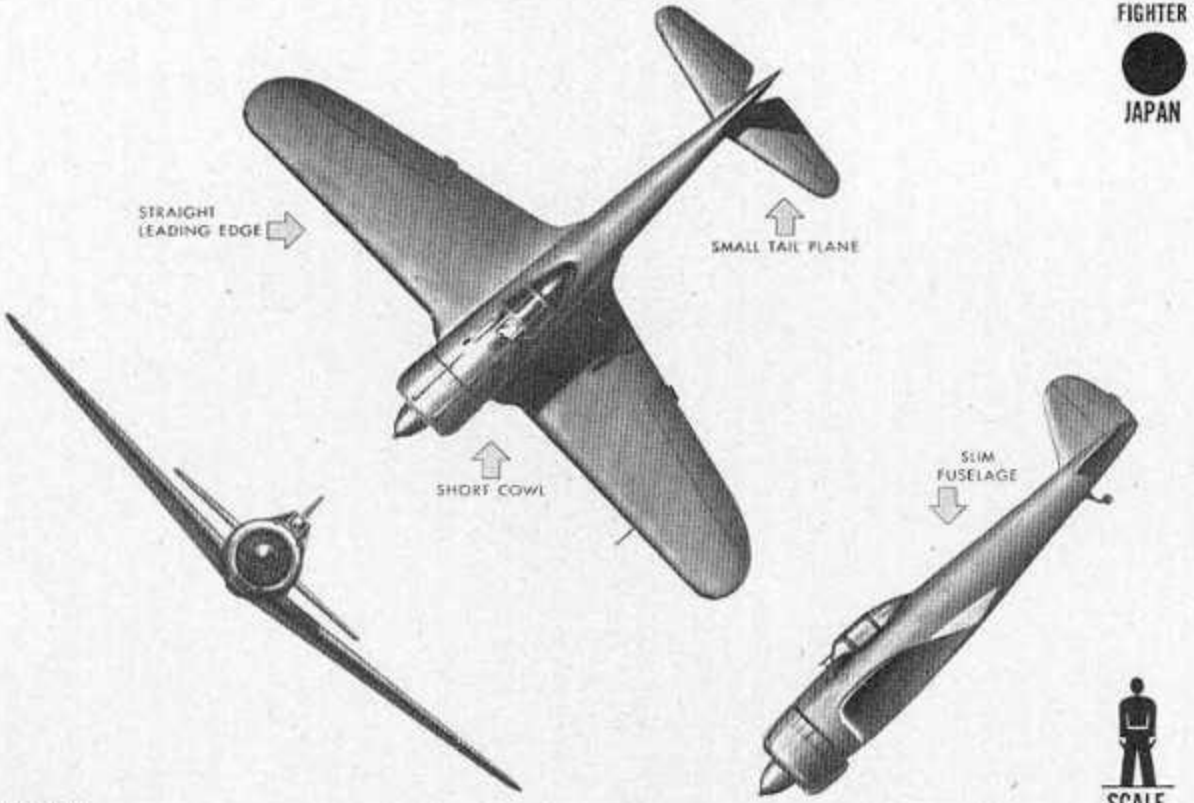
D



OSCAR

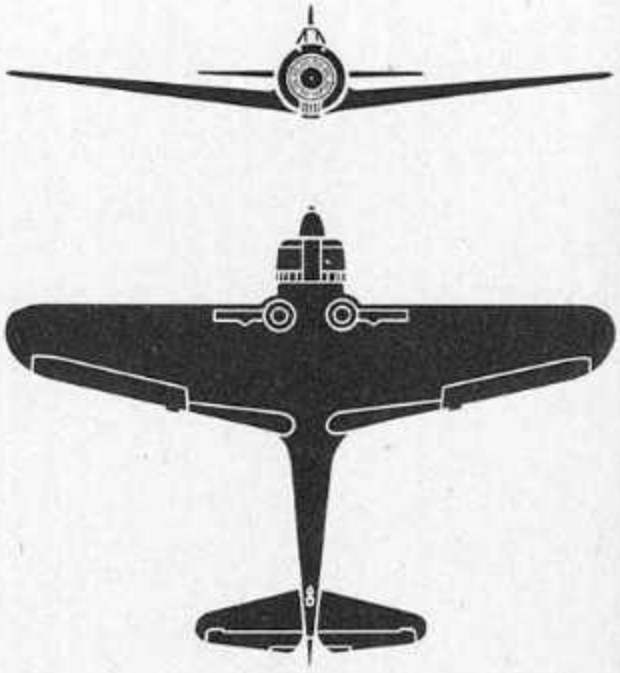
FIGHTER

JAPAN



NAKAJIMA
JAPAN

SCALE
6-FOOT MAN



SPAN: 37 ft. 7 in.
LENGTH: 28 ft. 7 in.
MAX. SPEED: 317 m. p. h. at 16,000 ft.
SERVICE CEILING: 37,500 ft.

DISTINGUISHING FEATURES: Single radial engine, low-wing monoplane. Wing has straight leading edge, tapered trailing edge, and rounded tips. Short, blunt nose with large spinner. Fuselage narrow aft of wings. Small unfaired cockpit over wing. Tailplane tapers to rounded tips and has a V-shaped cut-out to allow for rudder movement. Single fin and rudder has tapered leading edge and rounded trailing edge. Fixed tail wheel.

INTEREST: Oscar, an improved version of Nate, Type 97 fighter, has been in action in the Southwest Pacific, China, and Burma theaters. This plane is the first Jap fighter on which an attempt has been made to provide self-sealing fuel tanks. An improved version, Oscar Mark II, has recently become operational. It is fitted with a more powerful engine with a 2-speed supercharger, which has increased the maximum speed to 342 m. p. h. at 17,500 feet and the service ceiling to 38,400 feet.

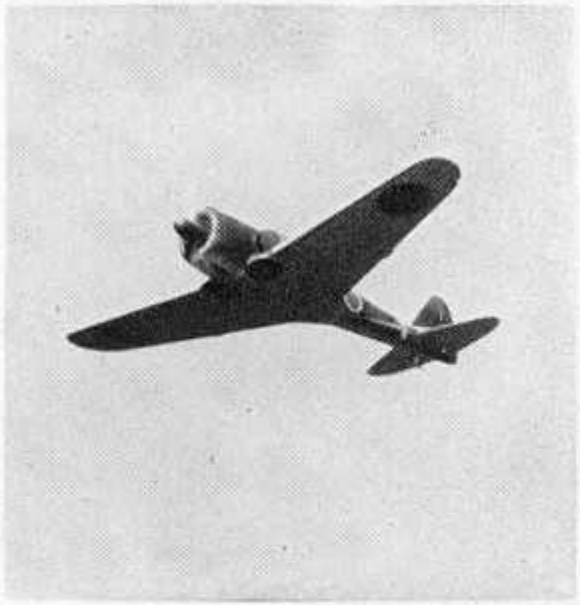
NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

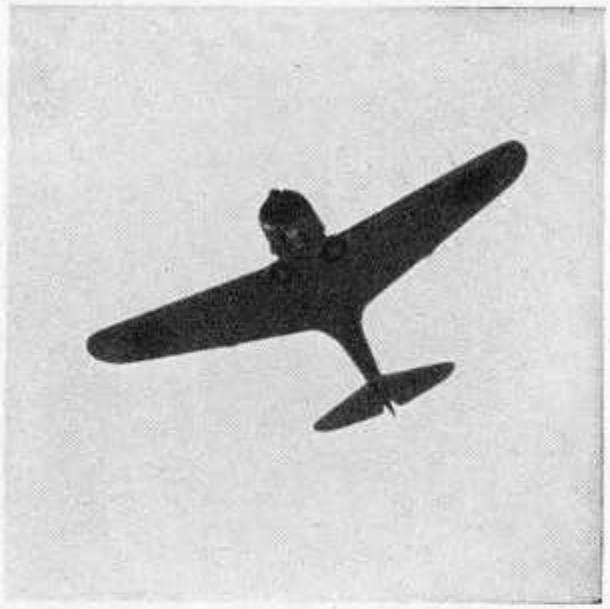
RESTRICTED

A

C

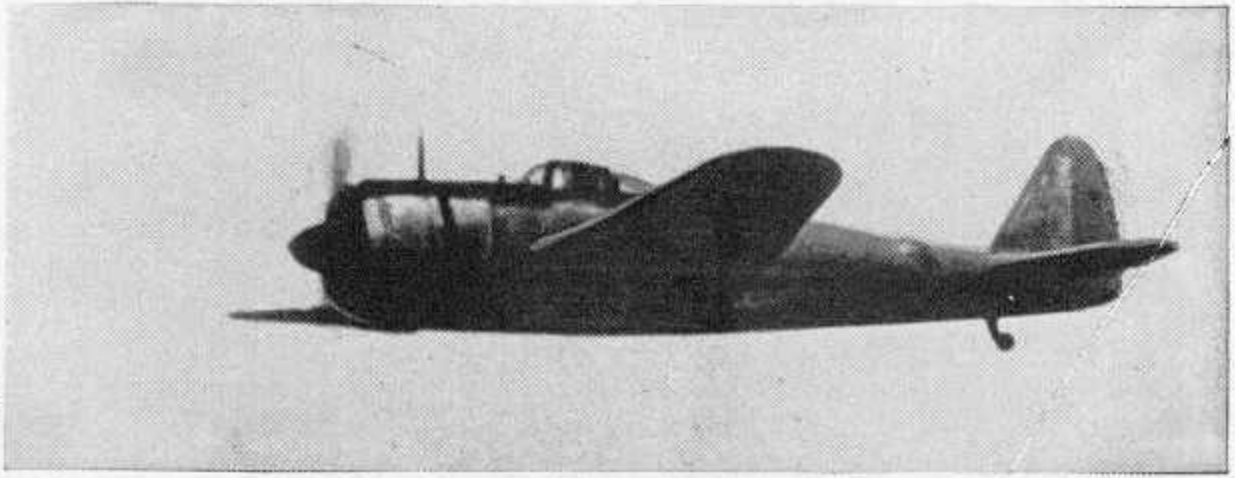


D



B

E

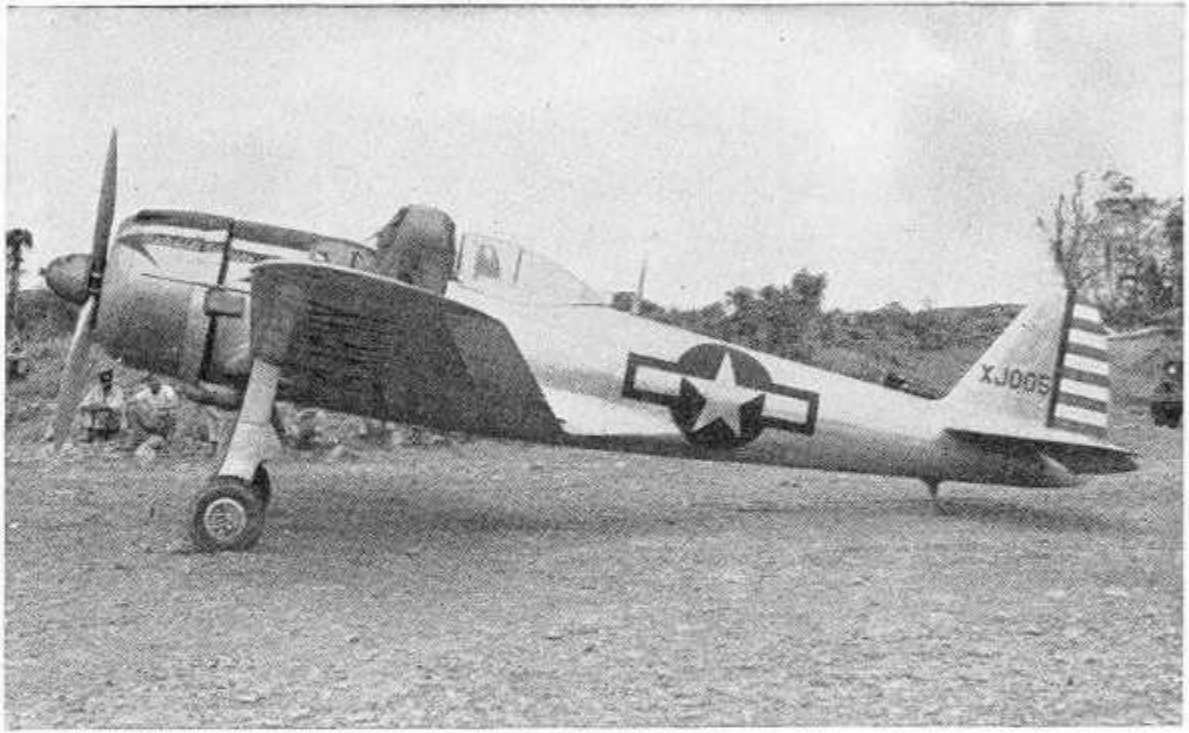


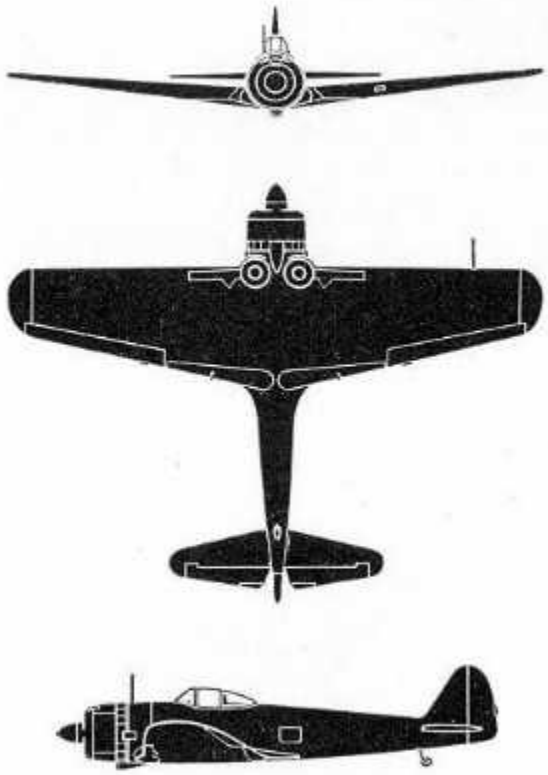
ARMY
NAKAJIMA
JAPAN

FIGHTER

JAPAN

OSCAR





DISTINGUISHING FEATURES: Single-engine, low-wing monoplane. Broad wing with straight leading edge, tapered trailing edge, and bluntly rounded tips. Slim fuselage with short blunt nose. Raised bubble-like cockpit canopy set forward over wing. Small tapered tailplane has sharply rounded tips.

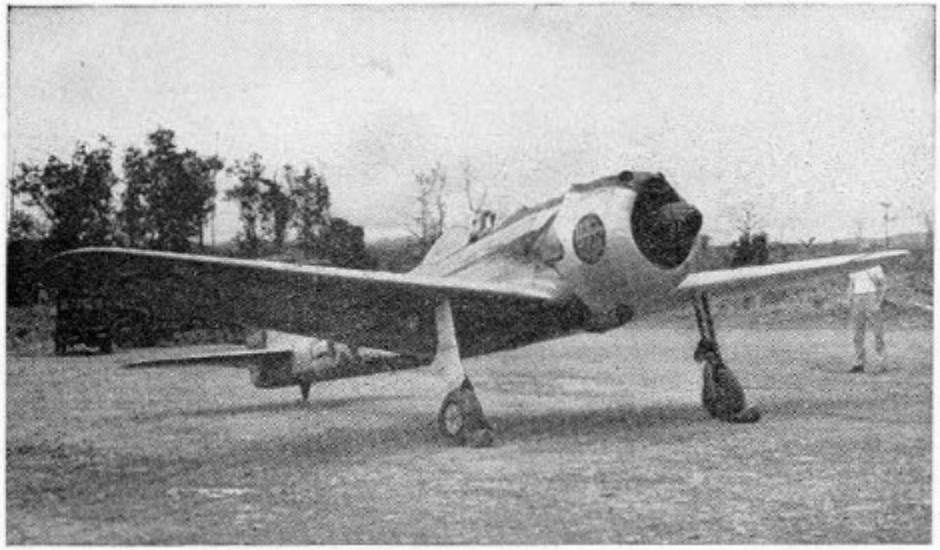
INTEREST: Oscar has operated in every theater patrolled by the Japanese Army. Two versions of Oscar, differing in length of wing, have existed. Only few of the longer span Oscars have been built. Oscar is highly maneuverable and has a good rate of climb.

SPAN: 35 ft. 7 in. **SERVICE CEILING:** 37,100 ft.
LENGTH: 29 ft. 2¾ in.
APPROX. MAX. SPEED: 347 mph at 20,000 ft.

APRIL 1945
FROM DATA CURRENTLY AVAILABLE

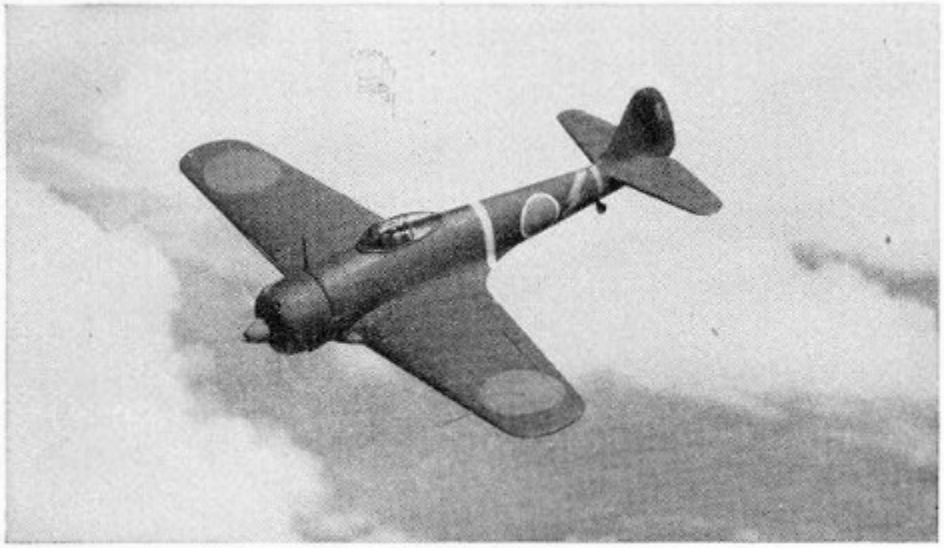
SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

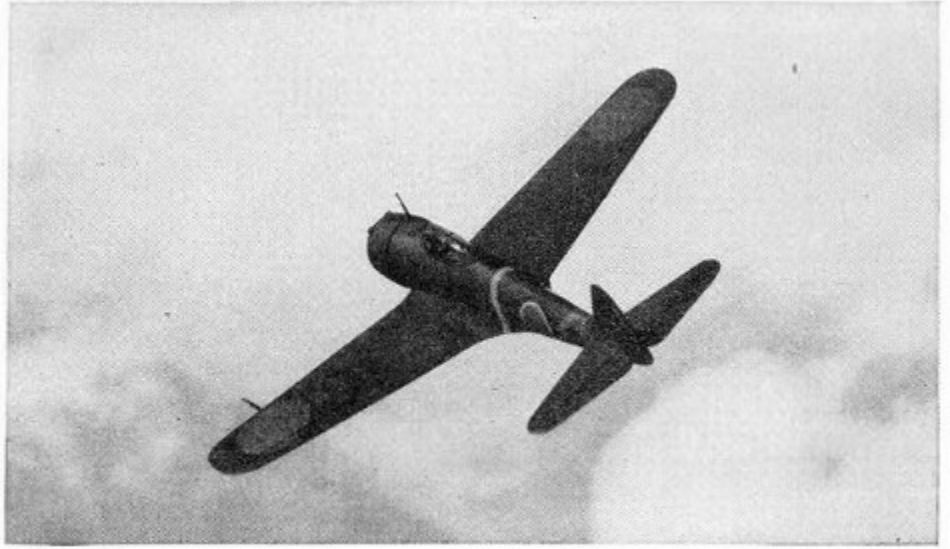
RESTRICTED



A ▲ B ▼

C ▲ D ▼

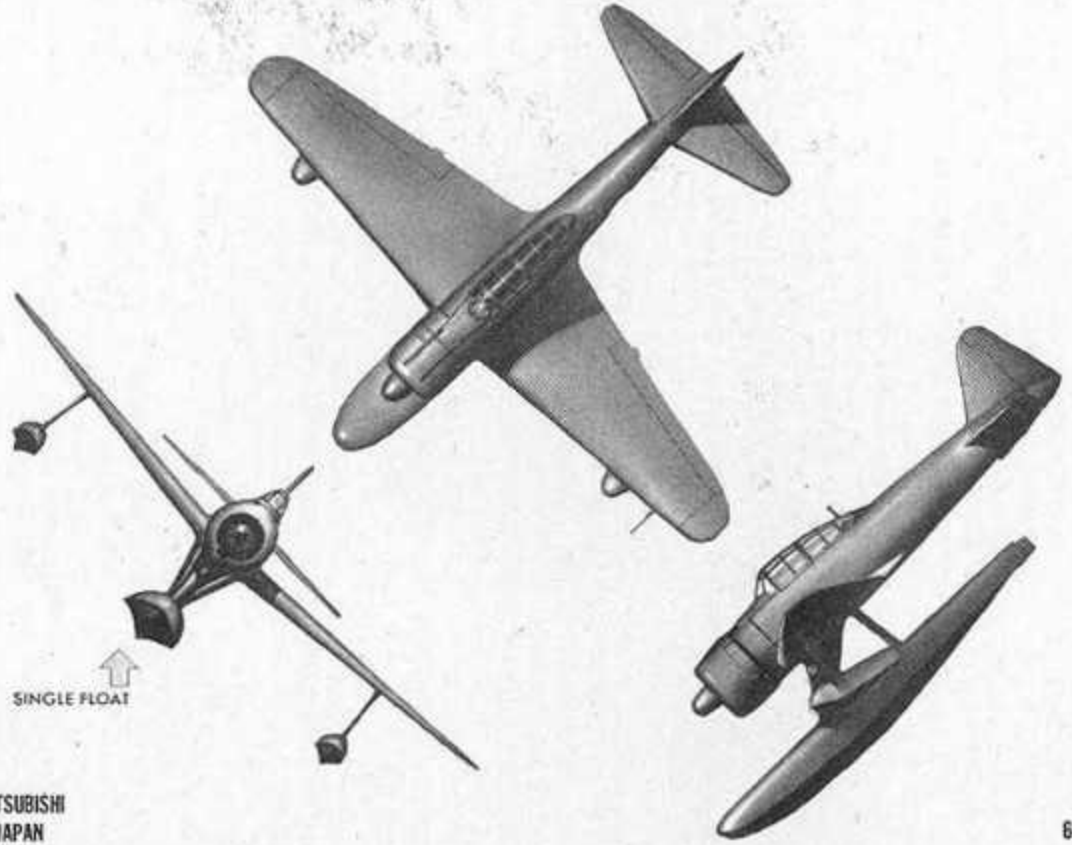




FIGHTER

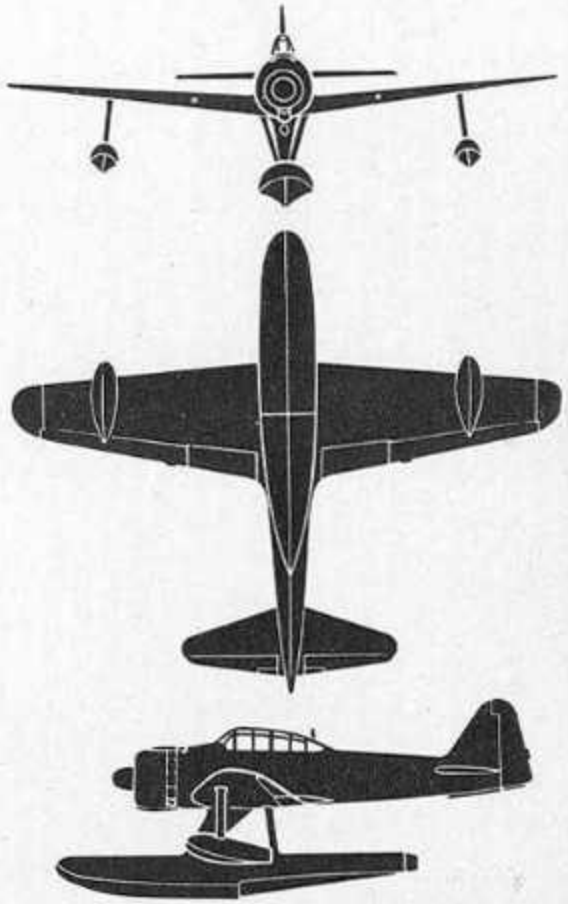
JAPAN

RUFE



MITSUBISHI
JAPAN

SCALE
6-FOOT MAN



SPAN: 39 ft. 5 in.

LENGTH: 33 ft. 10 in.

APPROX. SPEED: 278 m. p. h. at 16,000 ft.

SERVICE CEILING:
About 35,400 ft.

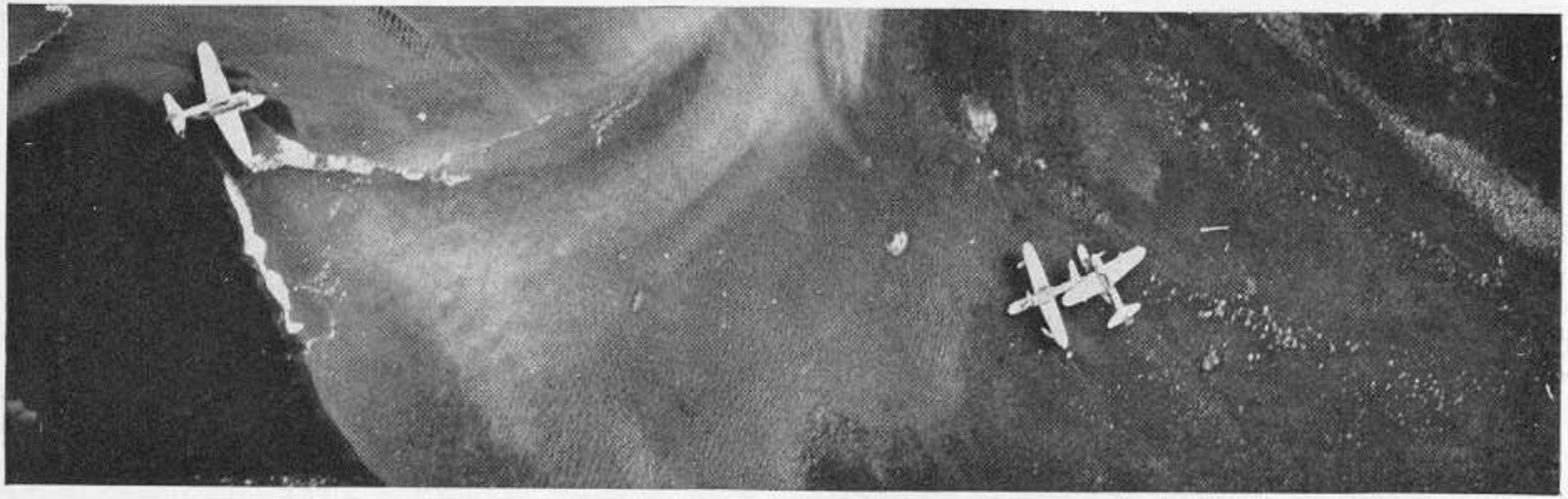
DISTINGUISHING FEATURES: Nearly the same as Zeke except for pontoon, wing-tip floats and rounded trailing edge of rudder. Radial engine, low-wing monoplane with single float. Wings have dihedral from the roots with nearly equal taper and rounded tips. Blunt nose with rather large spinner. Carburetor airscoop below cowling. Tapering fuselage. Cockpit canopy placed on top of fuselage. Tapered tailplane with round tips set forward of rudder. Tapered fin and rudder with trailing edge curved into fuselage at the bottom.

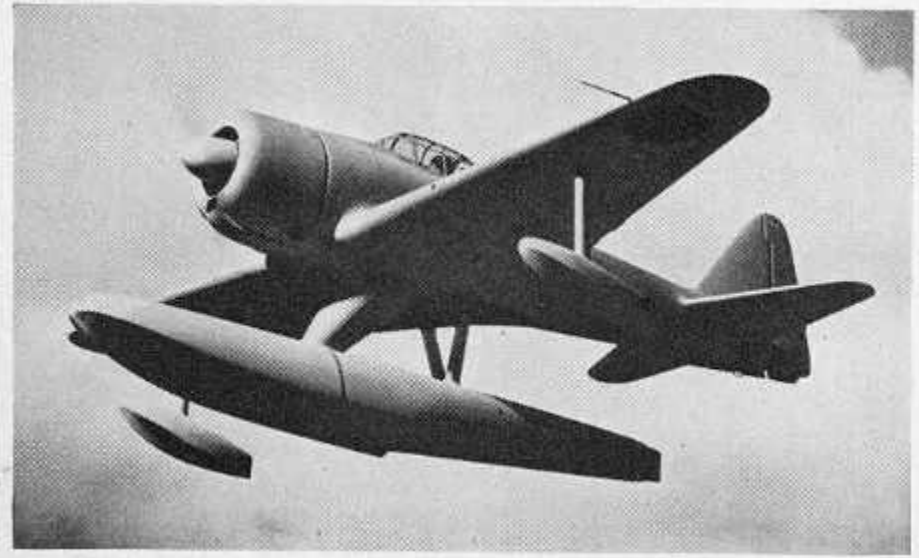
INTEREST: The float plane version of the Zero, Rufe is also manufactured by Mitsubishi. The additional drag and weight of the floats are responsible for a decrease in speed of approximately 50 m. p. h. and some loss in maneuverability. This plane was extensively used by the Jap forces in the Aleutians and is in operation in the Southwest Pacific.

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

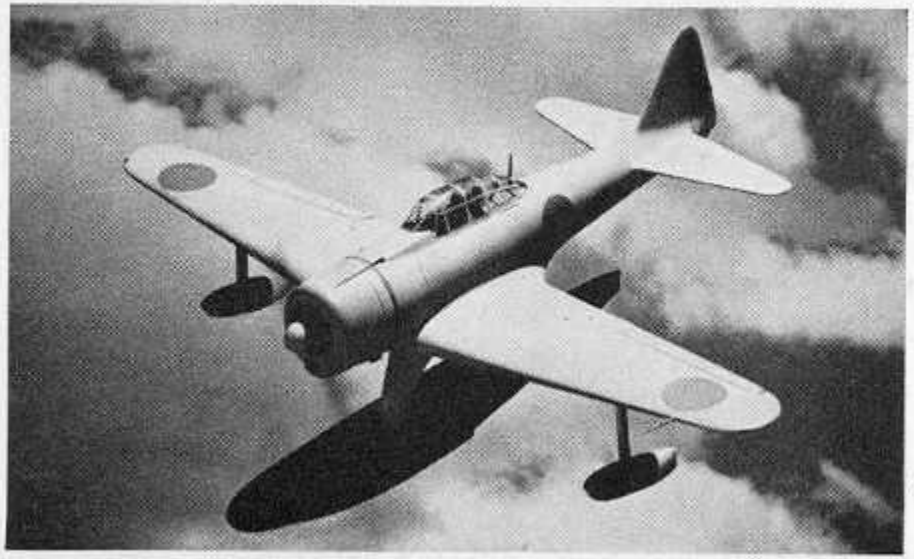
RESTRICTED

A





B

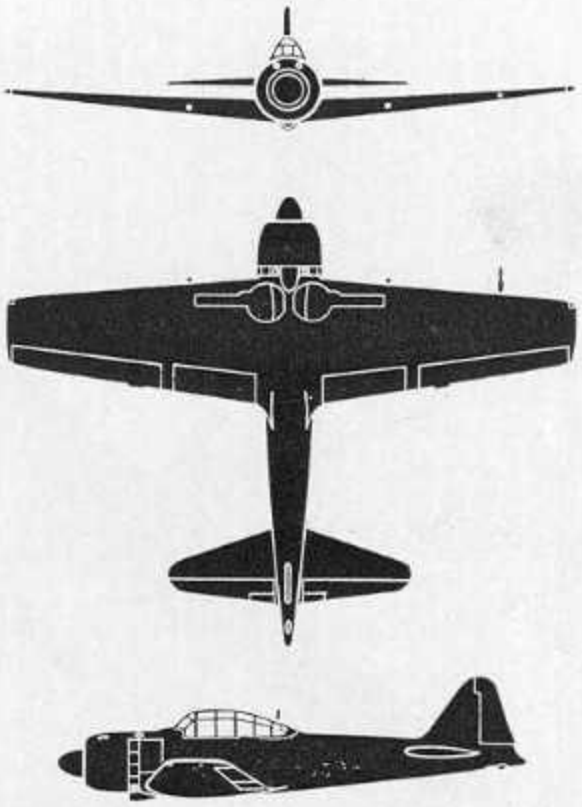


C

FIGHTER

JAPAN

HAMP



NAVY
NAKAJIMA
JAPAN

DISTINGUISHING FEATURES: Single radial engine low-wing monoplane with single fin and rudder. Large spinner. A typical Jap blister cockpit breaks top line of fuselage. Equal taper to fin and rudder with top curved. In plan view nose is short, wings double-tapered, tips square. Fuselage extends to point aft of double-tapered tailplane. Slight dihedral to wings.

INTEREST: Navy carrier-based fighter. Commonly referred to as Zeke with square wing tips. Operational use becoming less as Japs are producing better-performing fighters. Armament—2 x 7.7 mm machine guns in nose; 2 x 20 mm machine guns in wings.

SPAN: 36 ft. 5 in.
LENGTH: 29 ft. 10 in.
MAX. SPEED: 348 m.p.h. at 20,600 ft.
SERVICE CEILING: 35,900 ft.

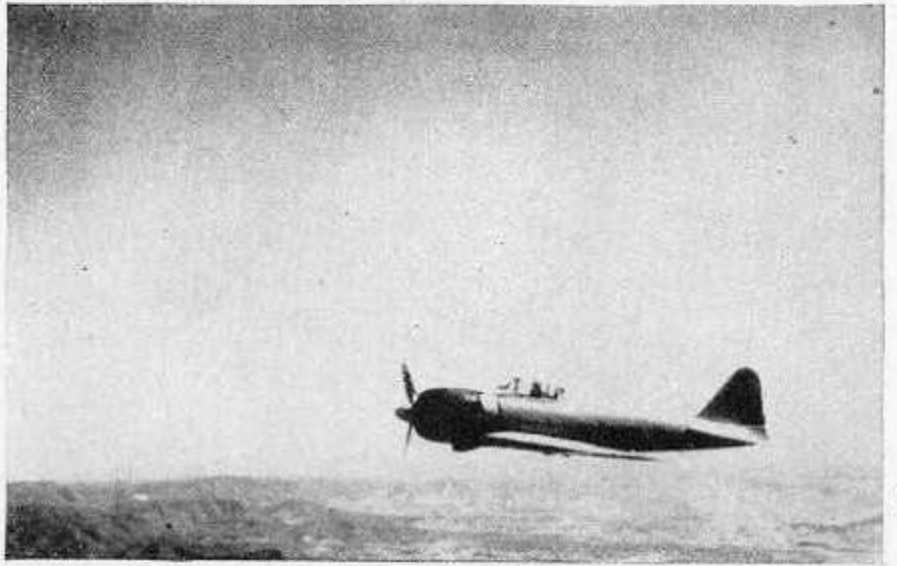
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A

B

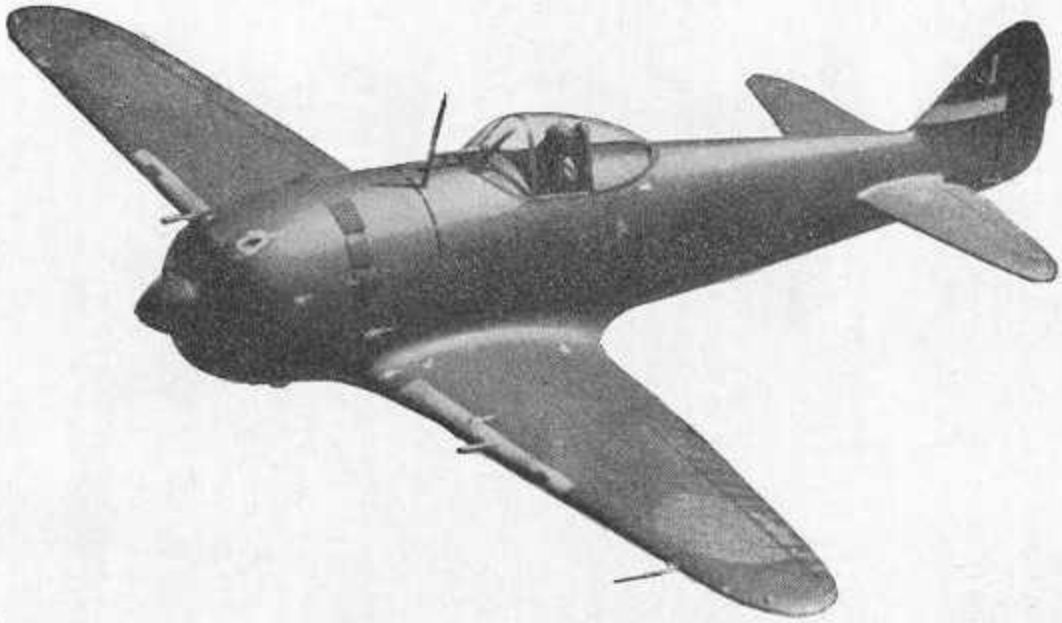


C

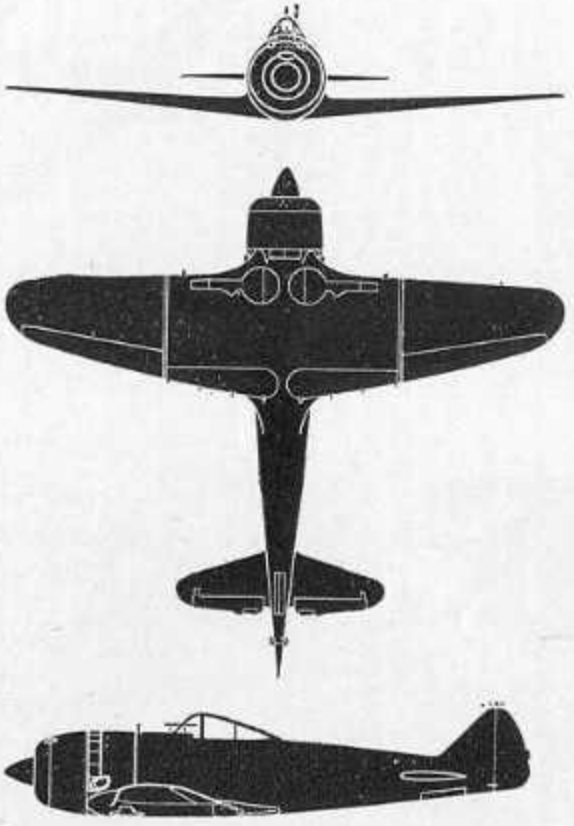
FIGHTER

JAPAN

TOJO



ARMY
NAKAJIMA
JAPAN



DISTINGUISHING FEATURES: Single engine low-wing monoplane with single fin and rudder. Fuselage has a heavy nose section which tapers quickly aft of the blister cockpit, giving Tojo a stubby, compact appearance. Horizontal stabilizers are set unusually far forward. Trailing edge of wing is elliptical leading edge straight. Similar to P-47 in wing-shape. Fuselage is very circular. Wings have little dihedral; fin and rudder set low.

INTEREST: Tojo has most powerful engine yet found in Jap single-seat fighter and has highest speed and rate of climb. Allied opinion is that this is Jap's most dangerous and potent fighter. Armament— 2 x 12.7 mm machine guns in wing; 2 x 7.7 mm machine guns synchronized through propeller.

SPAN: 31 ft. 0 in.
LENGTH: 29 ft. 2 in.
MAX. SPEED: 376 m.p.h. at 17,200 ft.
SERVICE CEILING: 36,500 ft.

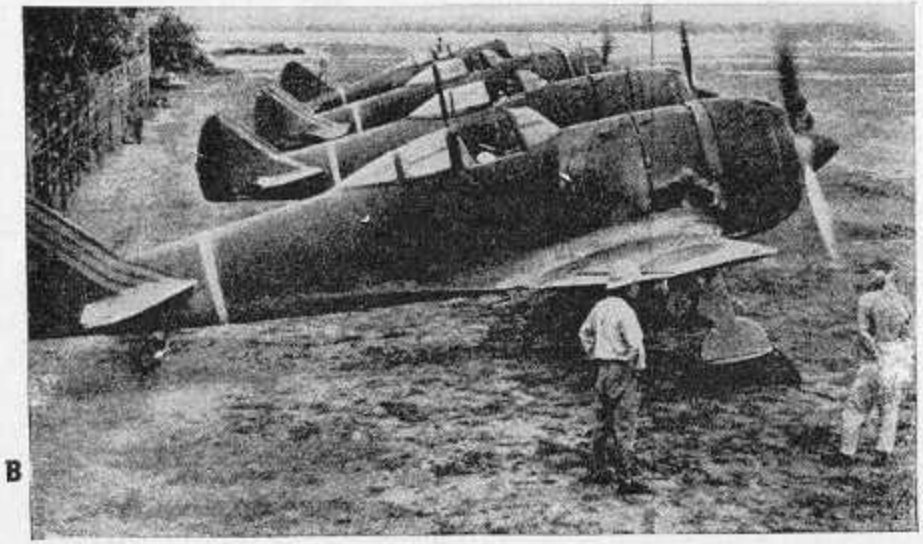
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

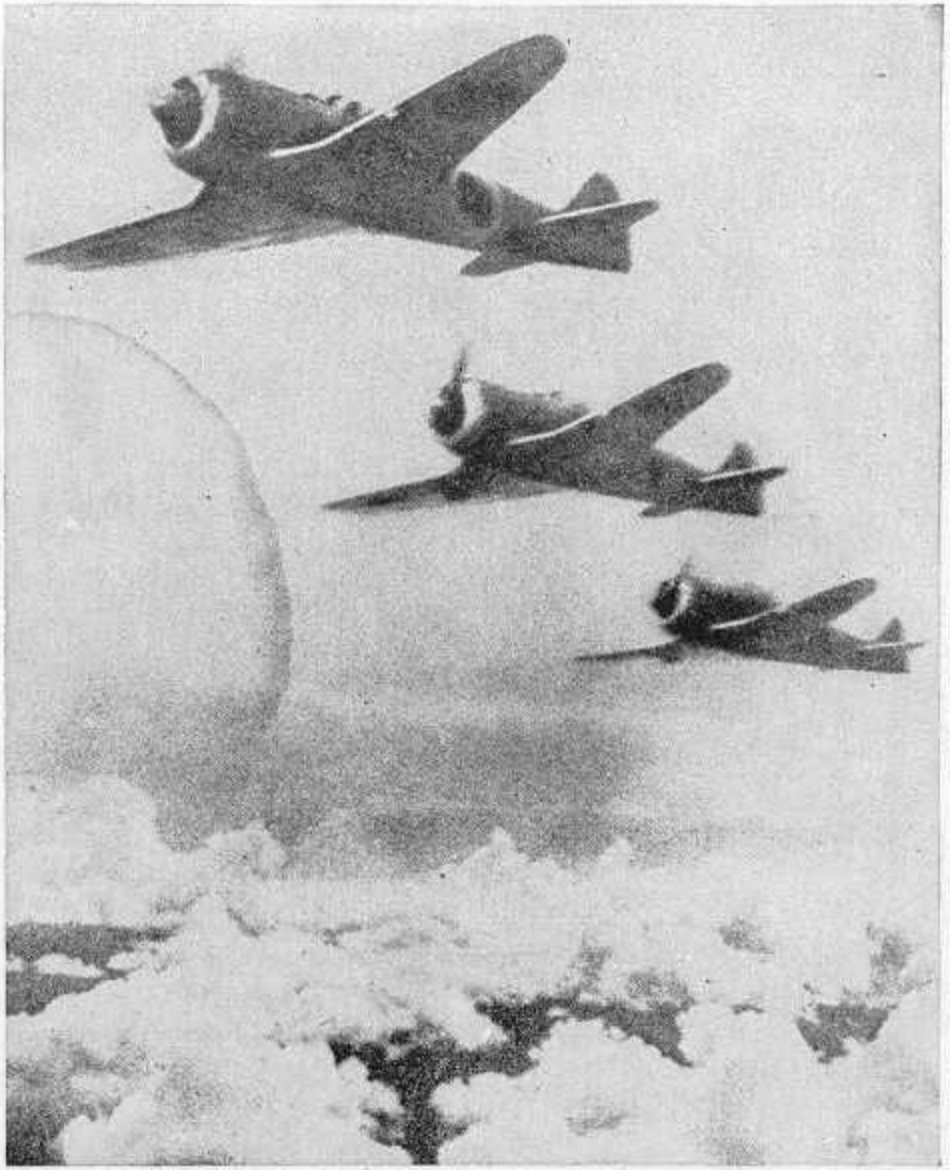
RESTRICTED

A

B



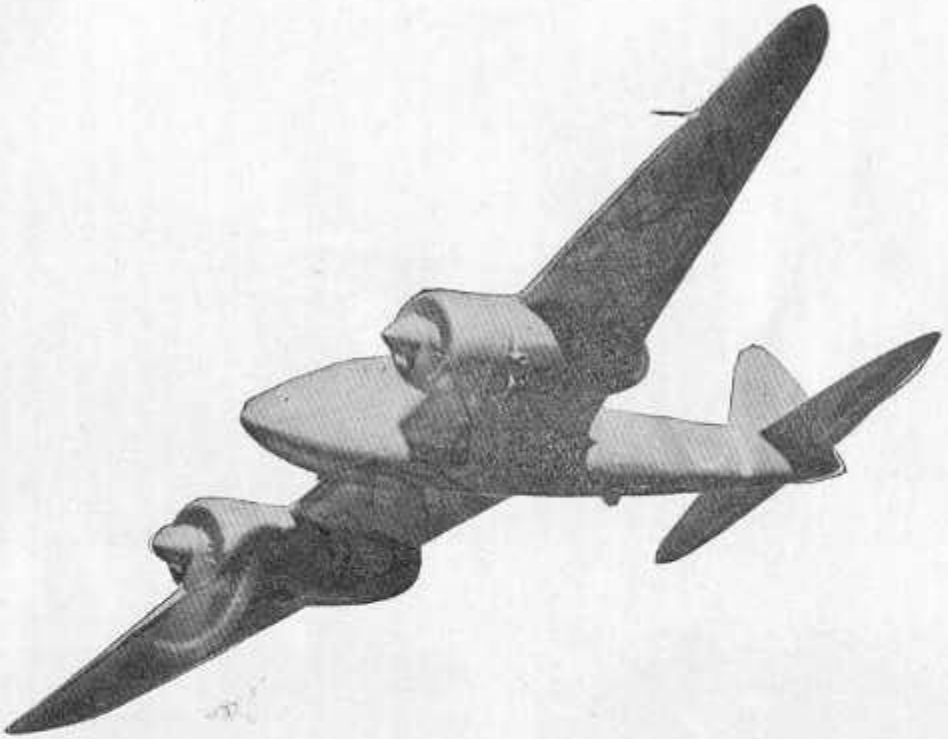
C



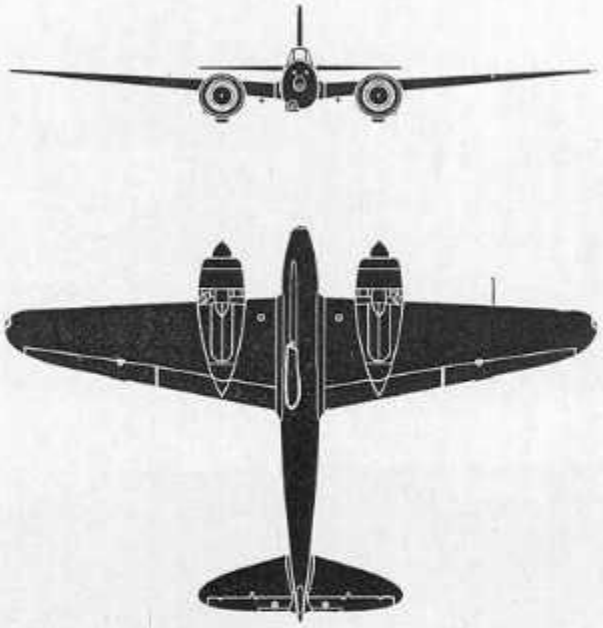
FIGHTER

JAPAN

NICK



ARMY
NAKAJIMA
JAPAN

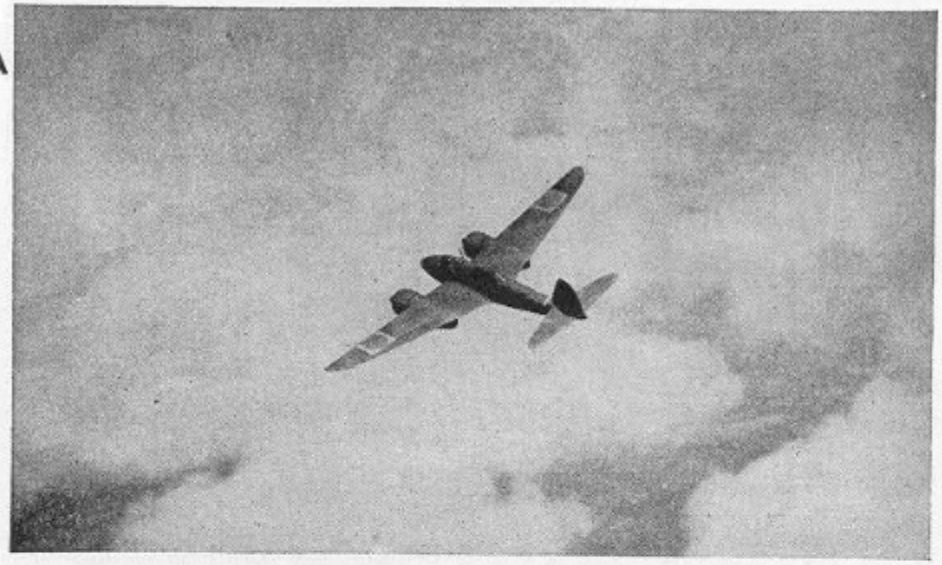


DISTINGUISHING FEATURES: Two engine low-mid-wing monoplane with single fin and rudder. Has solid nose. High greenhouse broken by solid sector. Fuselage thins aft of greenhouse. Fin and rudder rounded. Engine nacelles extend forward almost to nose. Slight taper to leading edge of wing, trailing edge has greater taper with round tips. Tail plane half-elliptical. Fuselage is oval-shaped, engines underslung, wings only slightly dihedral.

INTEREST: First known two engine Jap fighter. Heaviest armed of Jap fighters; one report rated it as having 2 x 12.7 mm., 1 x 20 mm., and 1 x 37 mm. machine guns, all in fuselage and firing forward. Not comparable to single seat Jap fighters in performance. P-40 can outperform it.

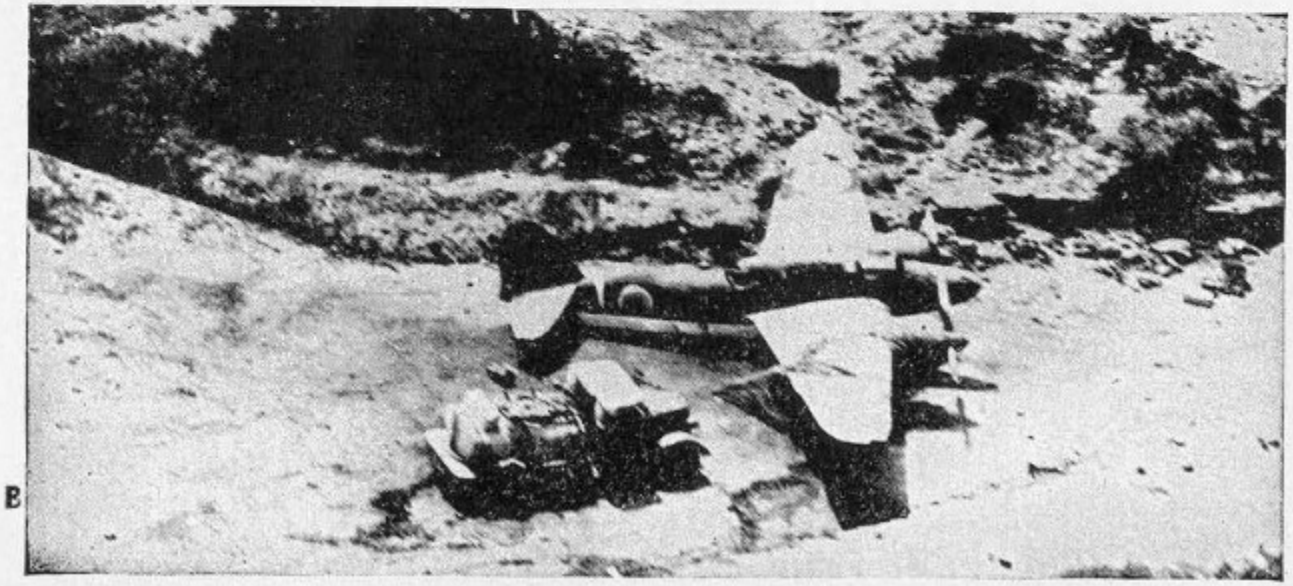
SPAN: 49 ft. 6 in.
LENGTH: 34 ft. 6 in.
MAX. SPEED: 357 m.p.h. at 18,500 ft.
SERVICE CEILING: 35,300 ft.

RESTRICTED

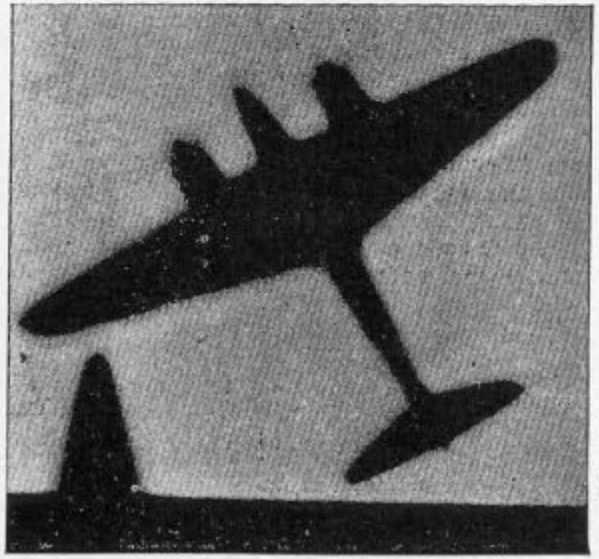


A

C



B



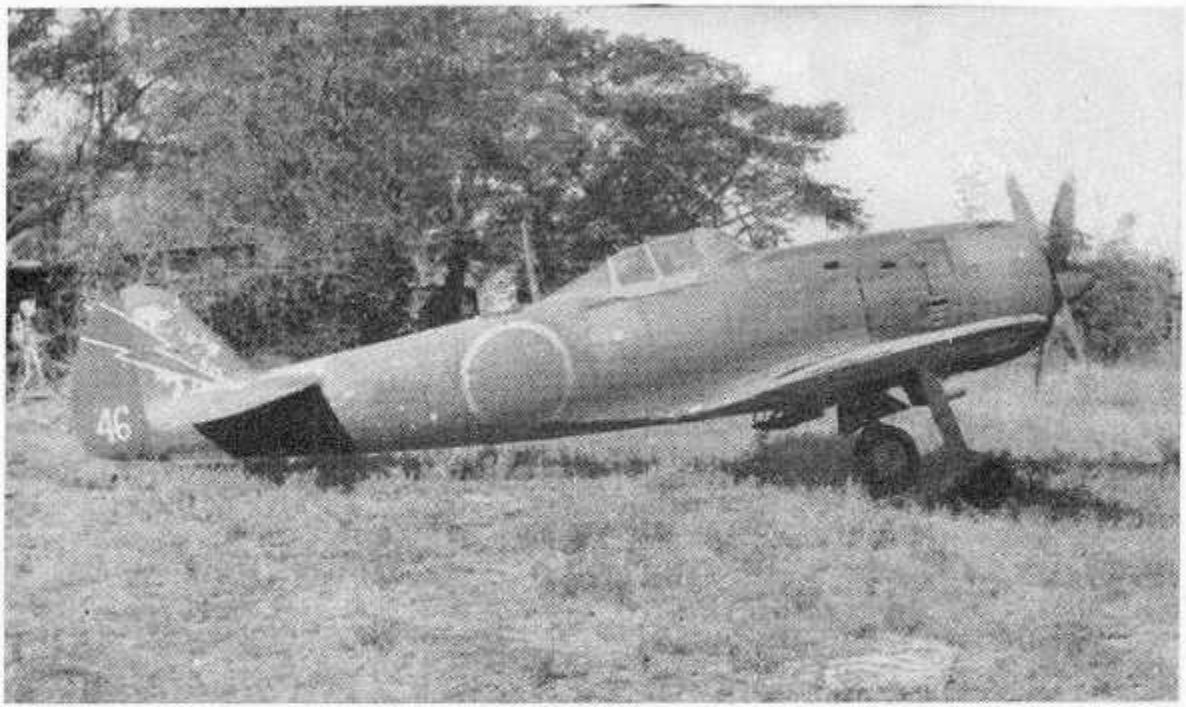
D

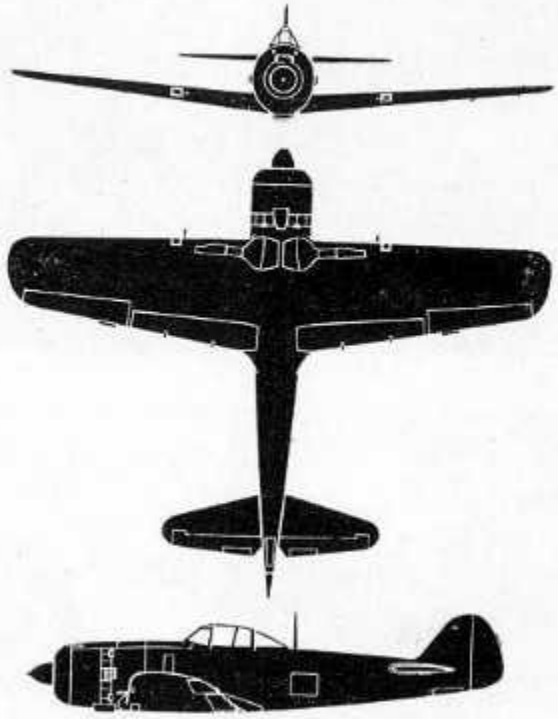
ARMY
NAKAJIMA
JAPAN

FIGHTER

JAPAN

FRANK





DISTINGUISHING FEATURES: Single - engine, low-wing monoplane. Its wing, with a straight leading edge, tapered trailing edge, and blunt rounded tips, closely resembles that of Oscar. Fuselage has rather heavy nose but narrows out toward tail. Bubble-type canopy. Fin and rudder is broad and low with curved trailing edge. Tailplane, set forward of rudder, tapers to sharply curved tips.

INTEREST: Frank is the first new Japanese Army fighter to attain full operational status since Tojo. Manufactured by Nakajima, Frank resembles Oscar in wing plan while its empennage is similar to that of Tojo. Franks' first appeared in service in China during the summer of 1944 and were encountered in the recapture of the Philippines. Potentially one of the Japs most dangerous fighters, it is in the 400 mph class and is well armed.

SPAN: 37 ft. 1 in. **SERVICE CEILING:** 38,800 ft.
LENGTH: 32 ft. 4 in.
APPROX. MAX. SPEED: 427 mph at 20,000 ft.

APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

B ▼

A ▲

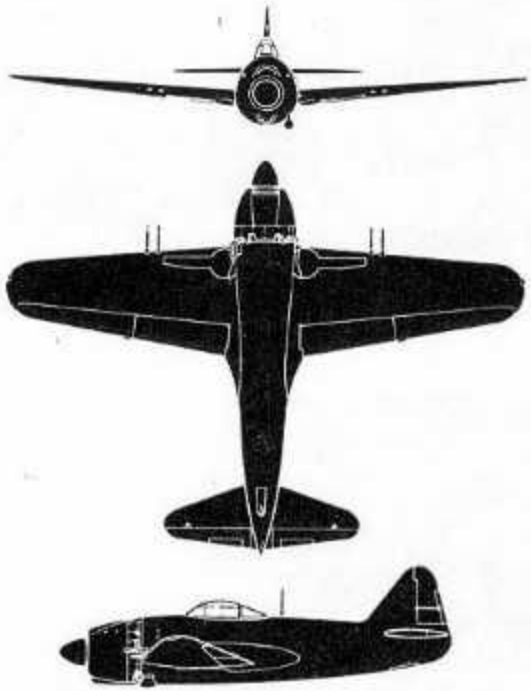
C ▼

NAVY
KAWANISHI
JAPAN

FIGHTER

JAPAN

GEORGE



DISTINGUISHING FEATURES: Single-engine, low mid-wing monoplane. Fuselage is deep and heavy throughout its length. Short, heavy nose with extremely large spinner. Small raised canopy. Wings taper to rounded tips and have prominent fairings at roots of trailing edges. Fin and rudder tapers to rounded tip.

INTEREST: George ("Shiden" or Violet Lightning) is a new Japanese Navy Fighter. It is the most heavily armed Jap fighter yet encountered, and may prove to be the most efficient the Japs have produced. Although developed as a land-based interceptor, it is fitted with bomb racks for ground attack and possible air-to-air bombing. Self-sealing tanks and armor for pilot are provided.

SPAN: 39 ft. 4 in. **SERVICE CEILING:** 39,400 ft.
LENGTH: 29 ft. 6¾ in.
APPROX. MAX. SPEED: 408 mph at 20,000 ft.

APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A ▲ B ▼

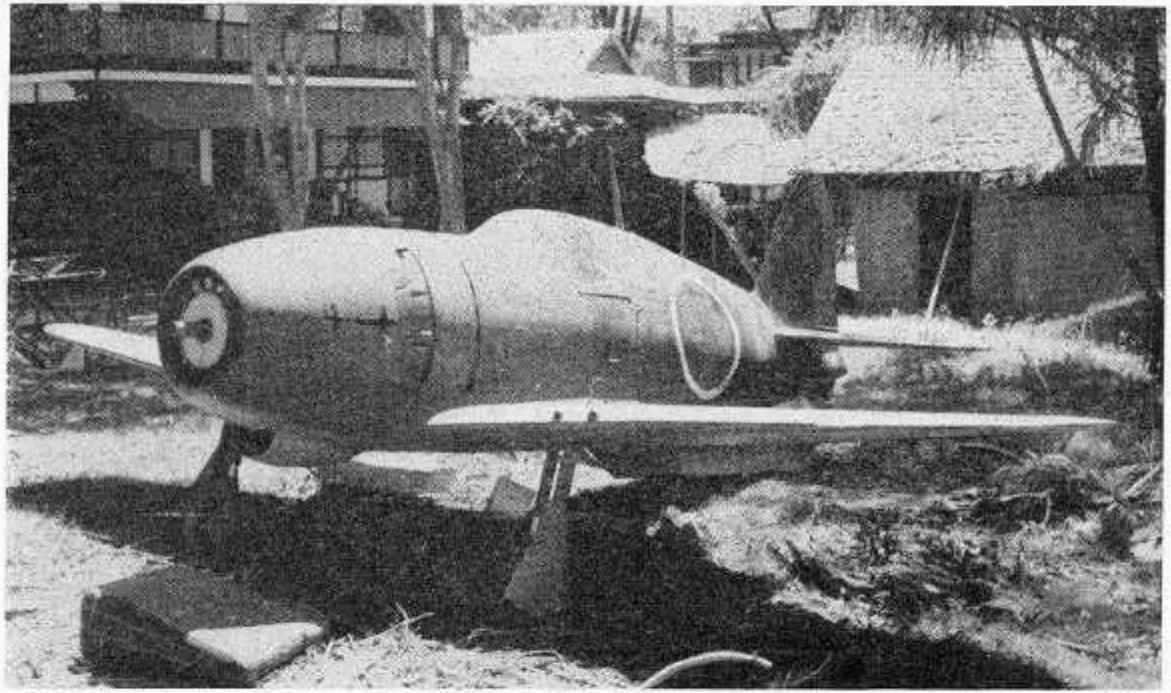
C ▲ D ▼

NAVY
MITSUBISHI
JAPAN

FIGHTER

JAPAN

JACK



DISTINGUISHING FEATURES: Single-engine, low-wing monoplane. Short, stubby wing tapers to well rounded tips. Large fillet noticeable at roots of trailing edge. Barrel-like fuselage is very short and stubby. Small diameter engine cowling. Low cockpit set into fuselage. Fin and rudder forms round tipped triangle and fairs into tail cone.

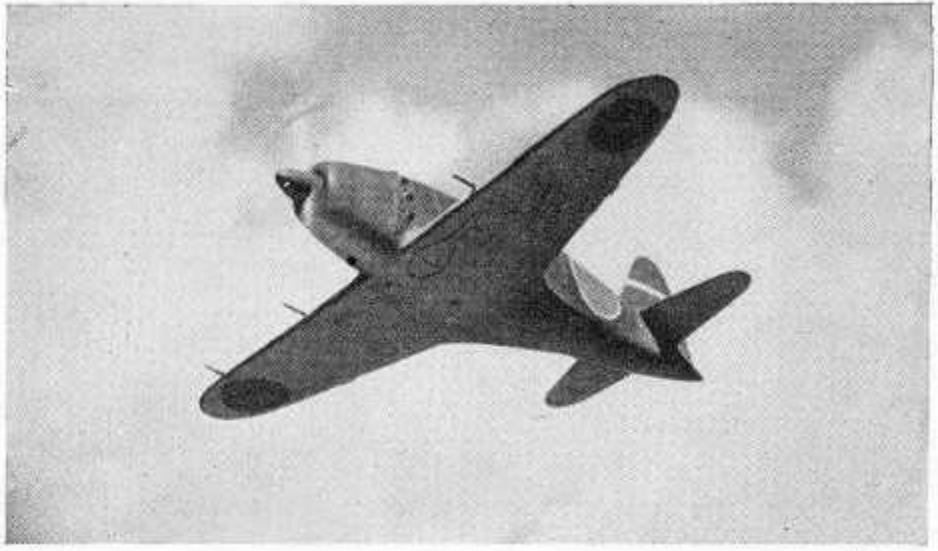
INTEREST: Jack, called "Raiden" (Thunderbolt) by the Japanese, is a new Navy fighter intended primarily as a short-range interceptor. It was built for either carrier or land-based operation. Jack is more powerful and heavily armed than previous Jap single-engine fighters, but is still small and light compared to U. S. fighter types.

SPAN: 35 ft. 5 in. **SERVICE CEILING:** 37,500 ft.
LENGTH: 31 ft. 9½ in.
APPROX. MAX. SPEED: 407 mph at 17,400 ft.

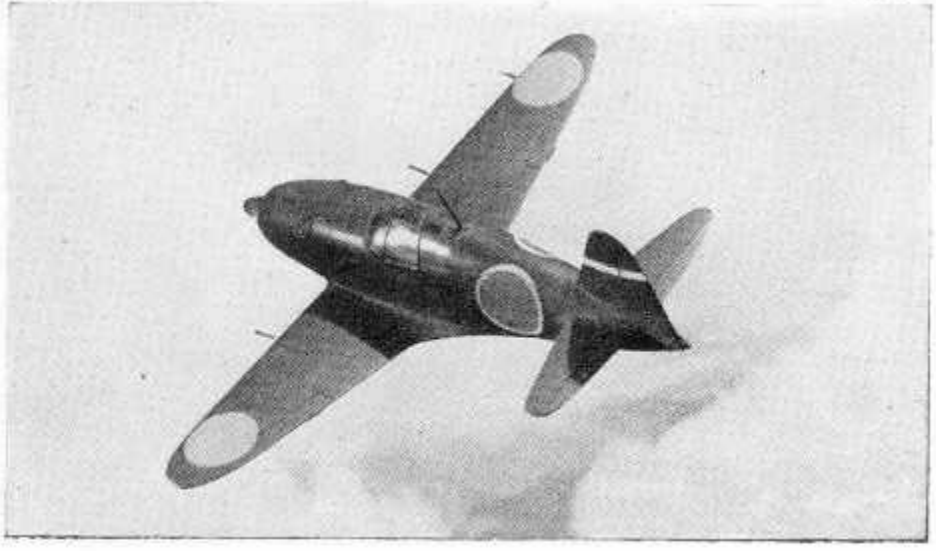
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

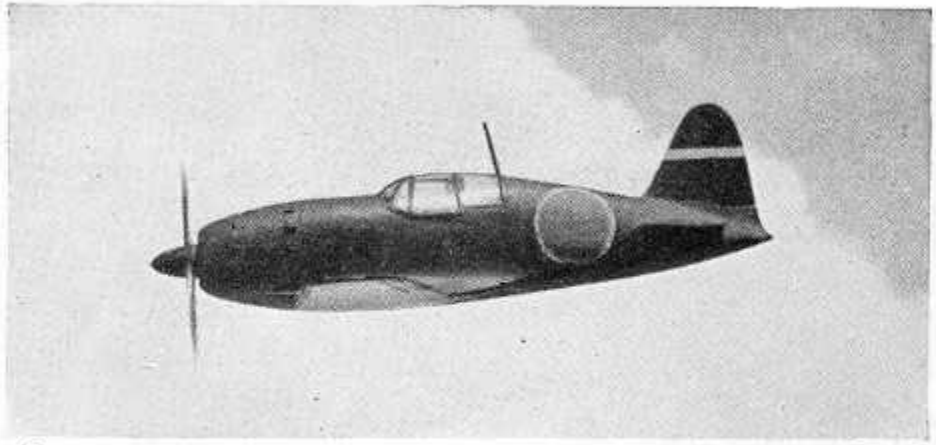
SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

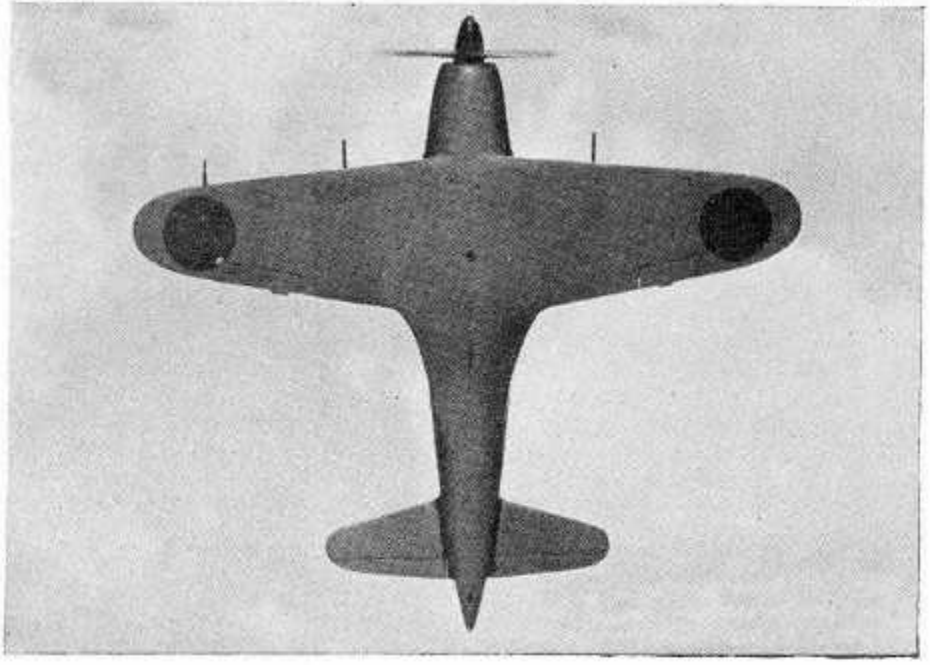


A ▲ B ▼





C ▲ D ▼

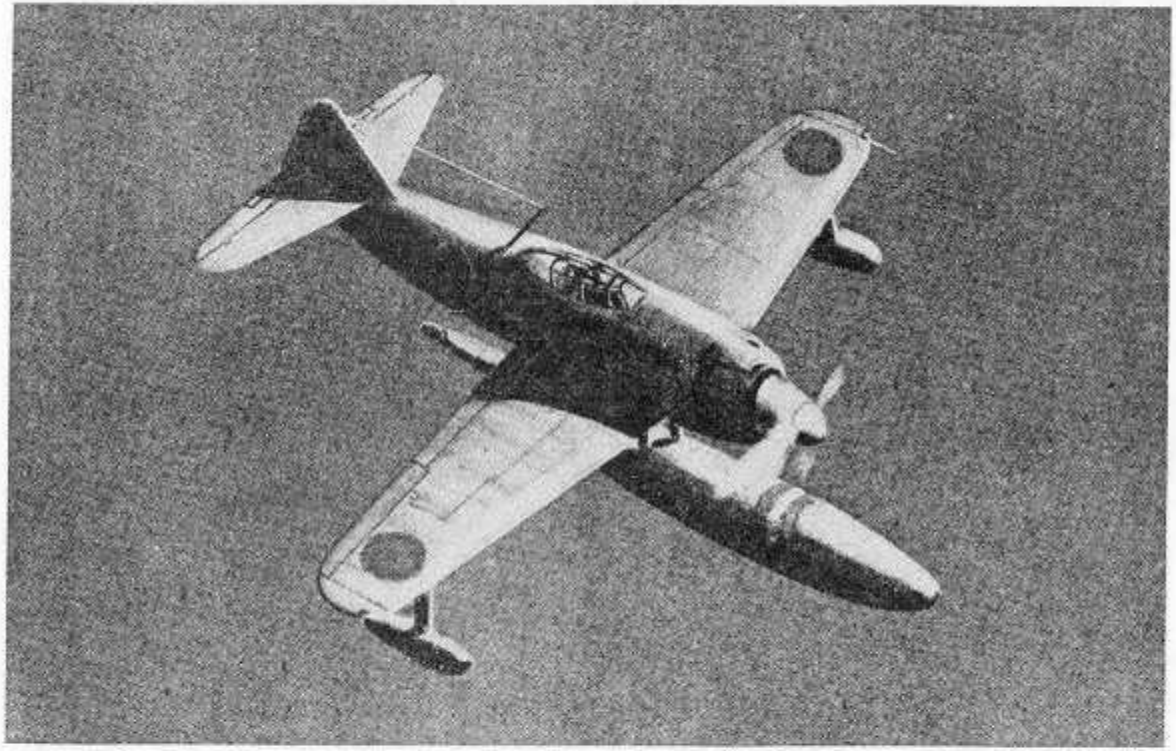


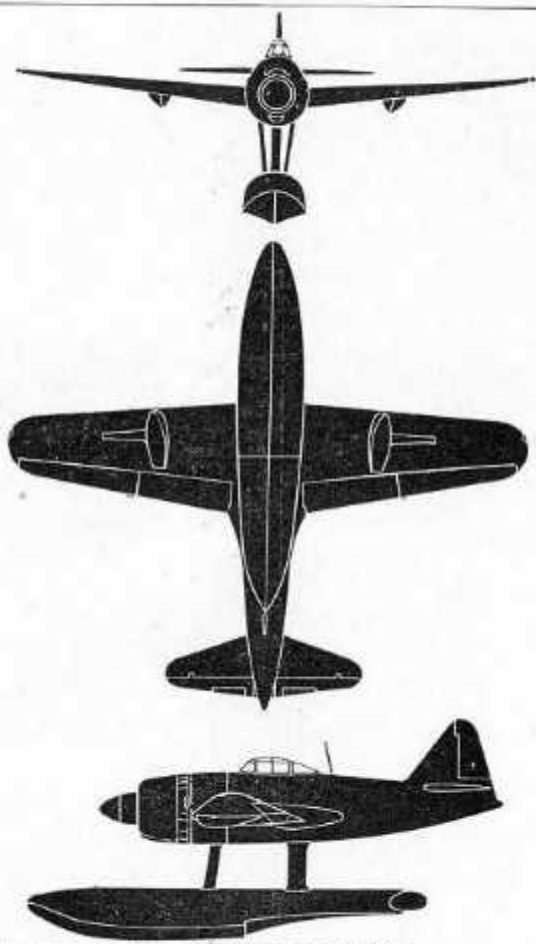
NAVY
KAWANISHI
JAPAN

FIGHTER

JAPAN

REX





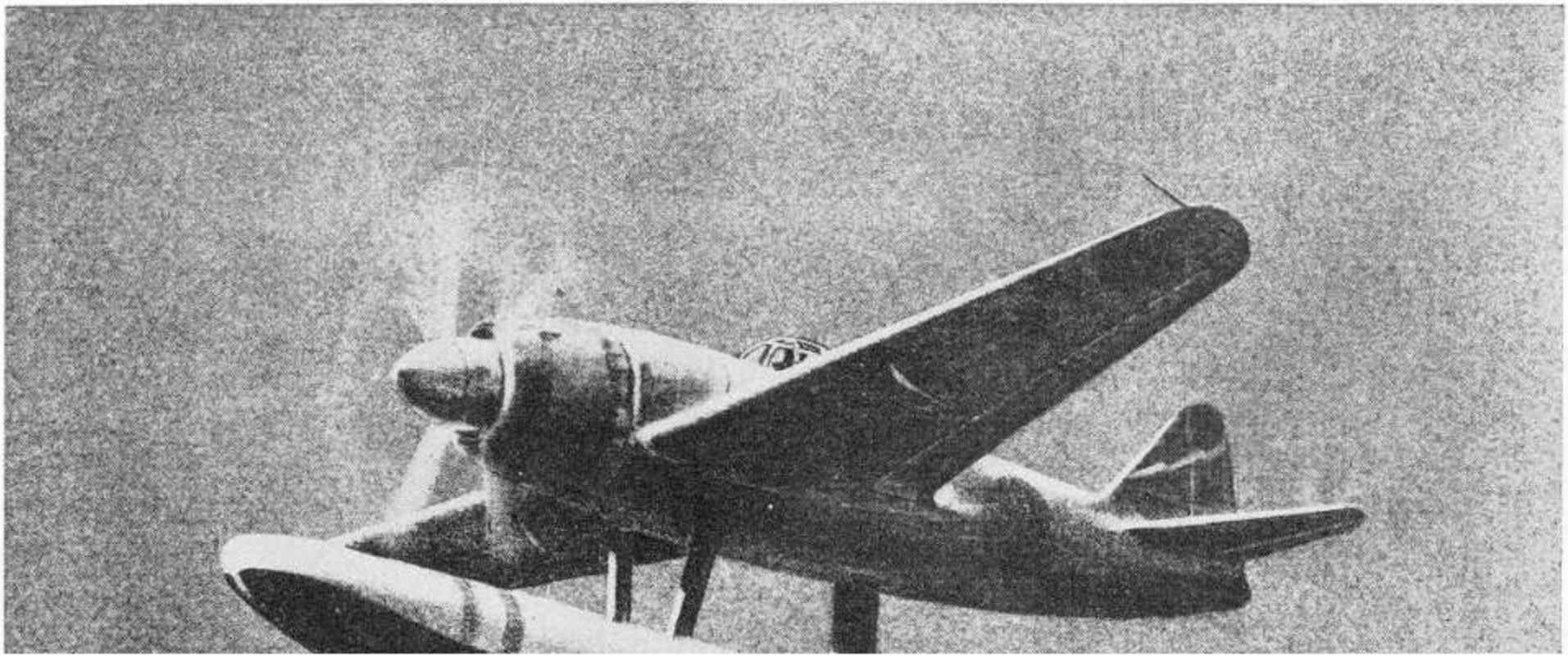
DISTINGUISHING FEATURES: Single engine, midwing monoplane with large central float and two semiretractible wing floats. Fuselage deep and heavy throughout. Extremely large spinner gives nose heavy pointed appearance. Small raised canopy. Wings taper to rounded tips. Single fin and rudder tapers to rounded tip.

INTEREST: Rex is now in operation and will probably replace Rufe as the main Japanese Navy float plane fighter. Known as Kyofu (High Wind) by the Japanese. The land-based interceptor George was developed from Rex.

SPAN: 39 ft. 4 in. **SERVICE CEILING:**
LENGTH: 35 ft. 5 in.
APPROX. MAX. SPEED: 336 mph at 18,680 ft.

APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

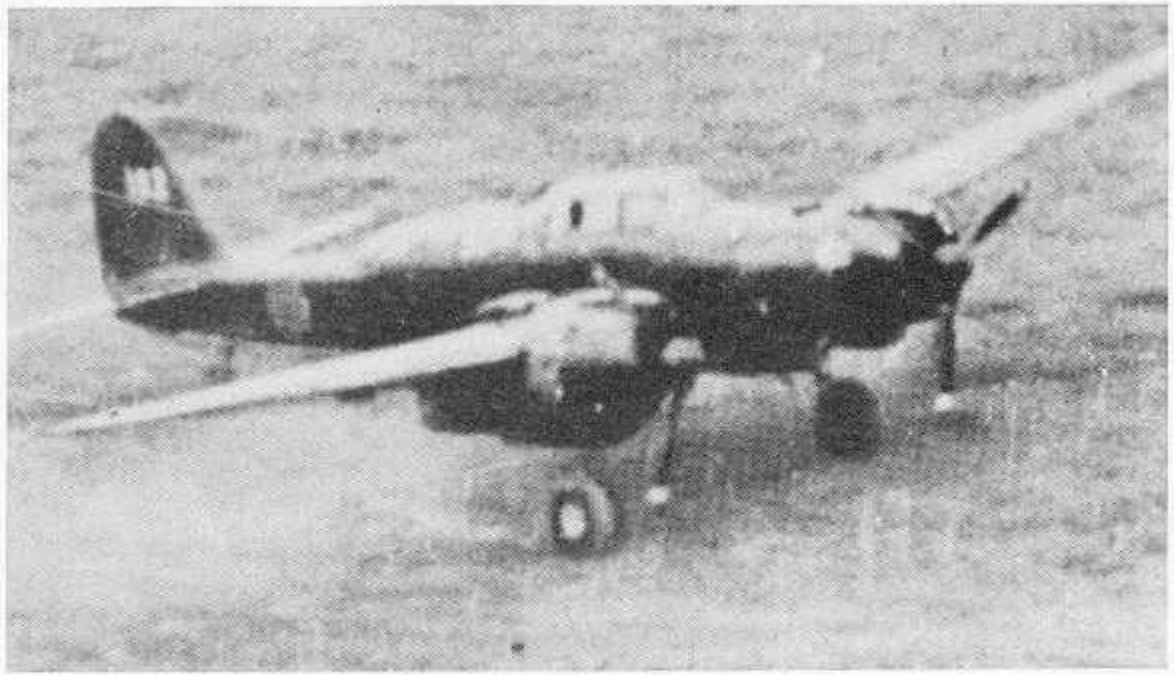


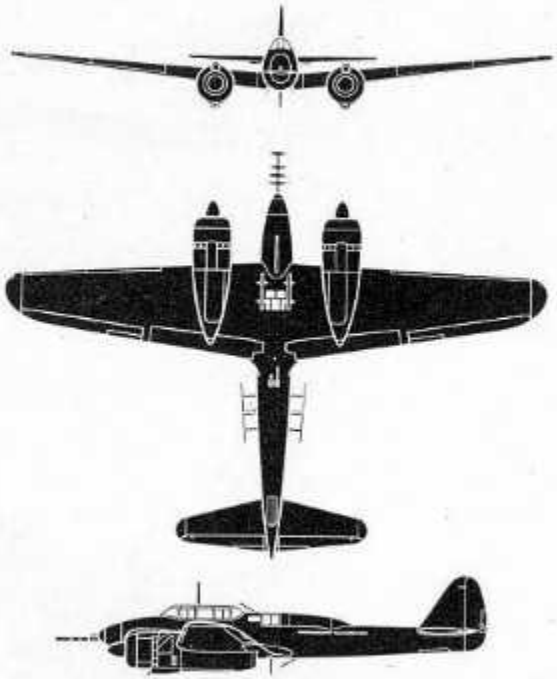
NAVY
NAKAJIMA
JAPAN

NIGHT FIGHTER, RECONNAISSANCE

JAPAN

IRVING





SPAN: 55 ft. 9¼ in. **SERVICE CEILING:** 32,740 ft.
LENGTH: 39 ft. 11 in.
APPROX. MAX. SPEED: 333 mph at 19,700 ft.

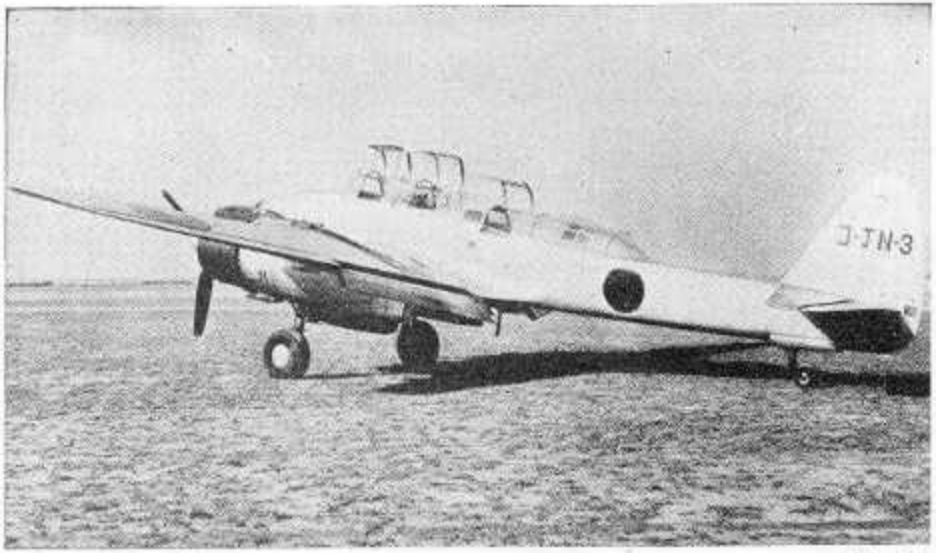
DISTINGUISHING FEATURES: Twin-engine, low-wing monoplane. Top line of fuselage broken by unique double cockpit canopy which has a stepped down after section. Fuselage is slim with short pointed nose. Leading edge of wing is nearly straight, trailing edge has moderate taper to curved raking tips. Engine nacelles appear fat and extend almost to end of nose. Fin and rudder has rounded shape.

INTEREST: Irving is used as a night fighter and reconnaissance aircraft. The Japanese know the night fighter version as "Gekko" or Moonbeam. Standard armament in the night fighter is believed to consist of four 20-mm fuselage guns although many variations are used. Performance of Irving is hampered by lack of maneuverability and relatively low speed.

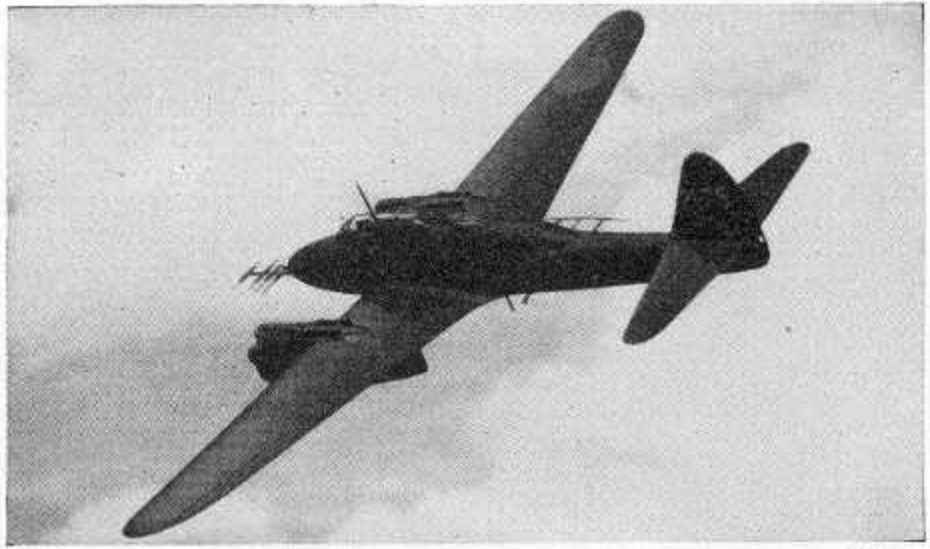
APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

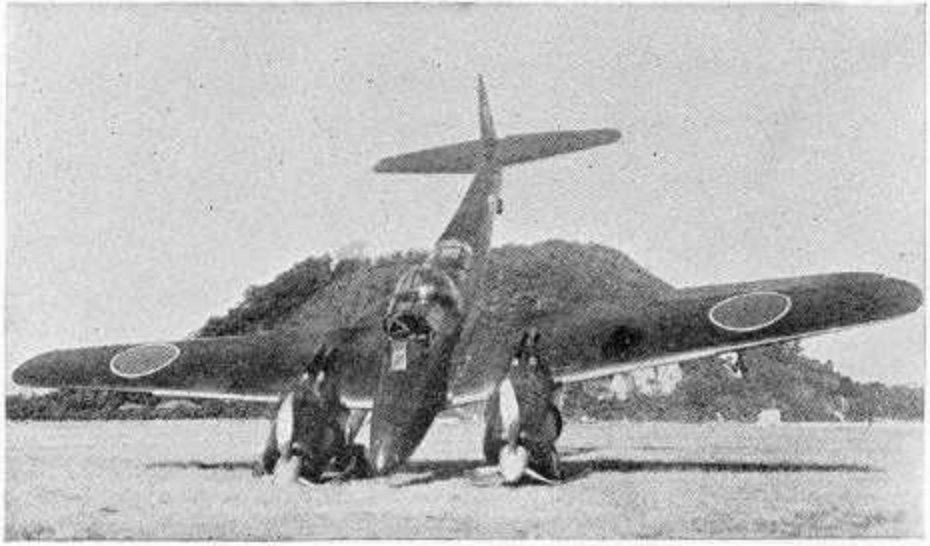
RESTRICTED



A ▲ B ▼



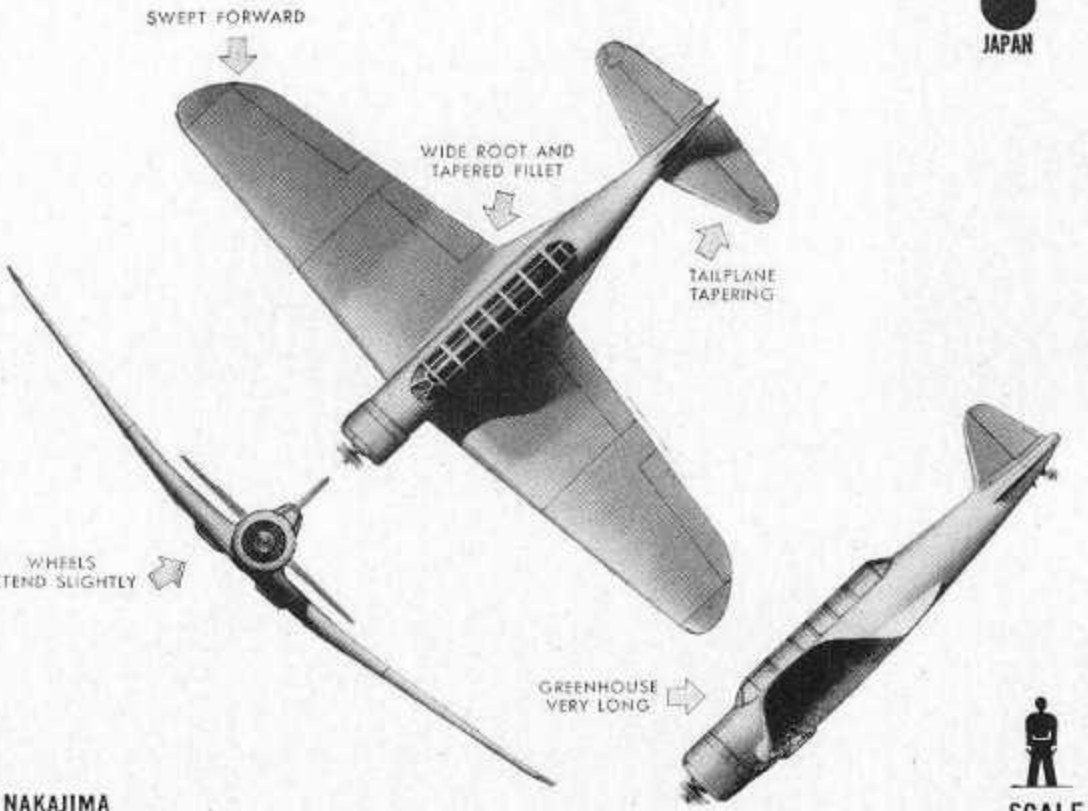
C ▲ D ▼



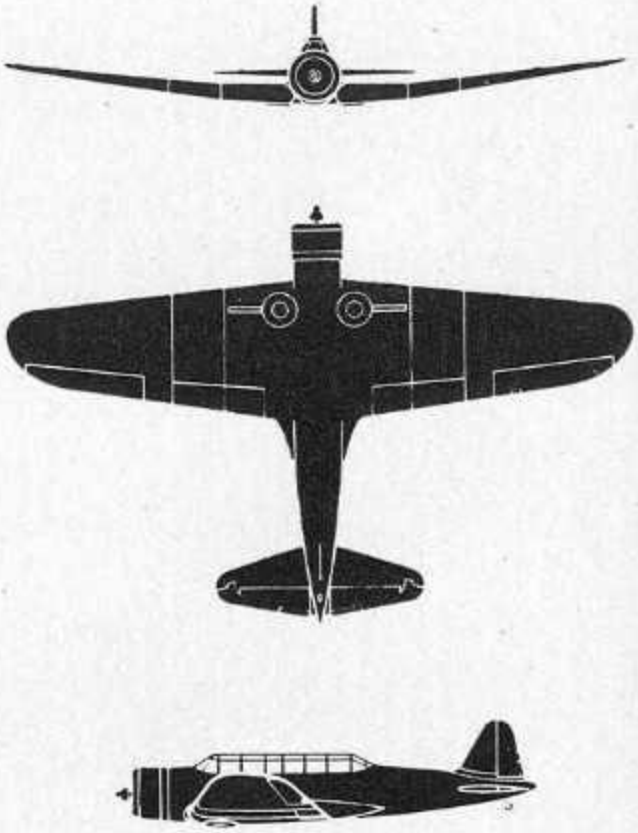
TORPEDO BOMBER

JAPAN

"KATE" TYPE 97 MK.3 TB



SCALE
6-FOOT MAN



NAKAJIMA
(ALSO MFG. BY MITSUBISHI)
JAPAN

DISTINGUISHING FEATURES: Low-wing radial engine monoplane. Outer panels of wings have marked dihedral. Tapered wings with elliptical tips. Round fuselage, blunt nose. A long horizontal cockpit enclosure protrudes above fuselage. Triangular fin and rudder with rounded top.

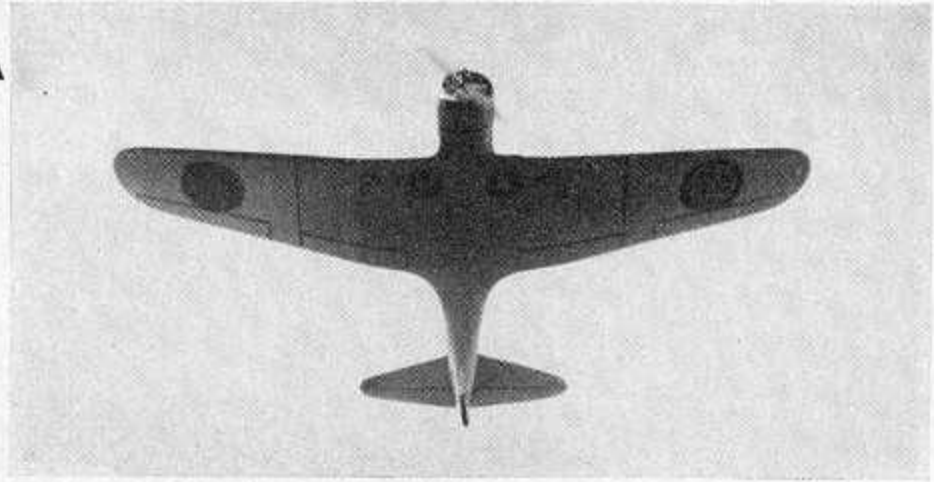
INTEREST: This navy torpedo bomber, originally manufactured by Nakajima and now also made by Mitsubishi, carries a crew of two, when used as a torpebo bomber, and a crew of three when used on other bomding operations. It lacks self-sealing gas tanks and it has no armor. At a cruising speed of 190 miles per hour, it has a normal range of 495 miles. For armament it has two 7.7 mm. fixed machine guns above the engine cowling, and one 7.7 mm. flexible machine gun in the rear cockpit.

SPAN: 52 ft.
LENGTH: 34 ft.
APPROX. SPEED: 225 m. p. h. at 8,000 ft.
SERVICE CEILING: 27,500 ft

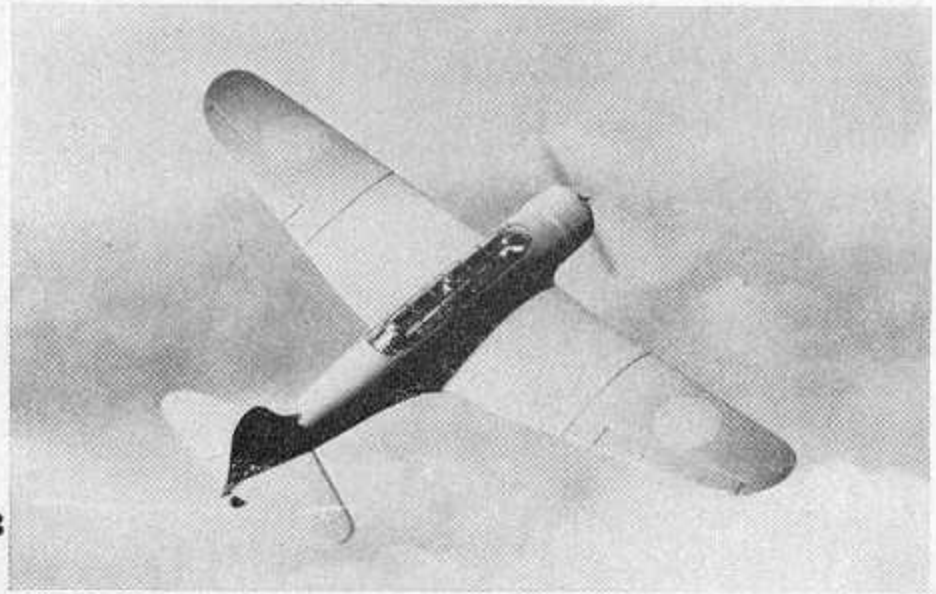
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

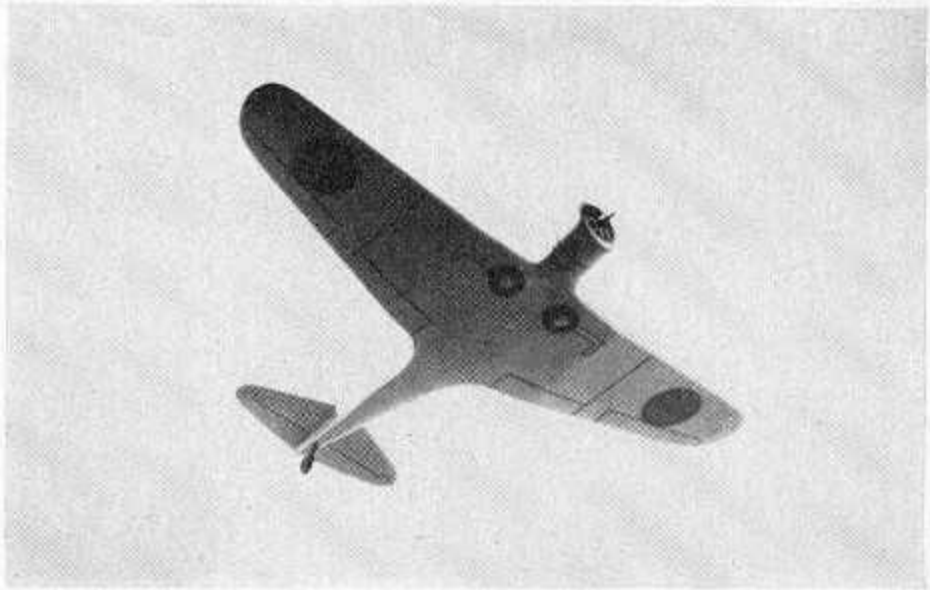
RESTRICTED



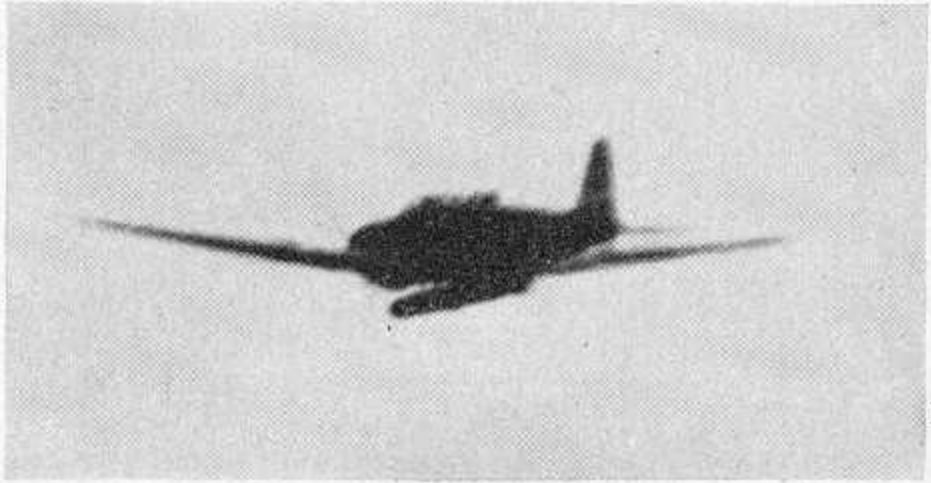
A



B



C



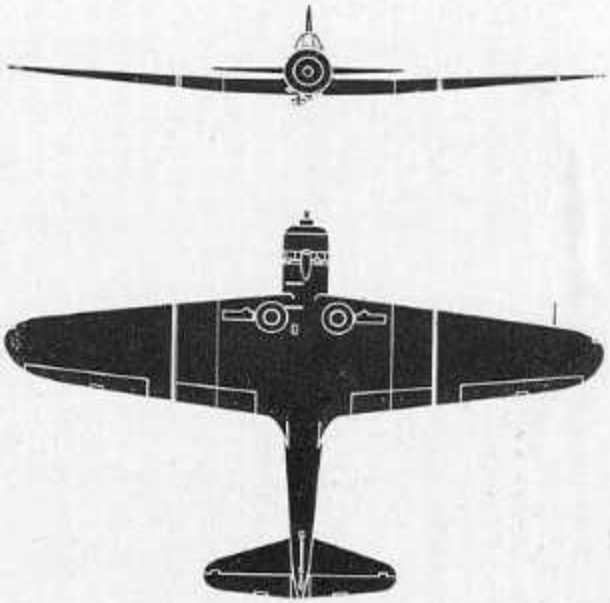
D

TORPEDO BOMBER

JAPAN

KATE III

NAVY
NAKAJIMA
JAPAN

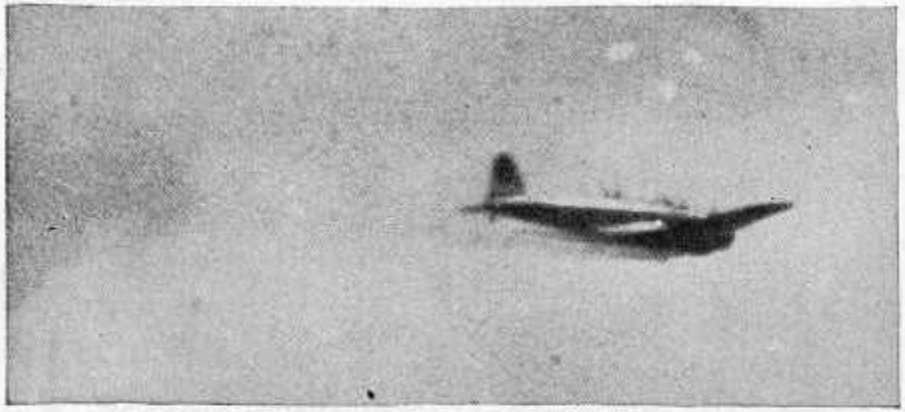


DISTINGUISHING FEATURES. Single engine, low-wing monoplane with single fin and rudder. Small propeller hub. Large greenhouse breaks upper side of circular fuselage, while lower side of fuselage is practically straight. Torpedo or bomb carried externally. Tail is rounded and small. Wings have about equal taper to leading and trailing edges and tips are well rounded. Stabilizer has greater taper to leading than trailing edges. Wing fillets are apparent. Very little dihedral to wings.

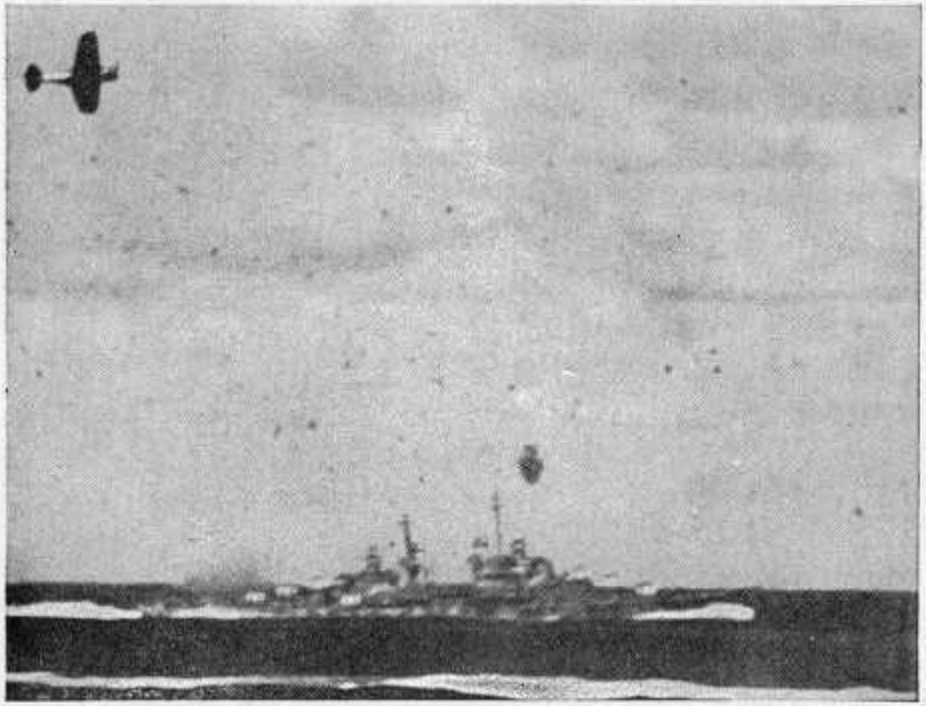
INTEREST: Torpedo bomber. Although Kate will continue to be seen, its production is probably decreasing. It was very important early in the war, proved very vulnerable to aircraft and anti-aircraft fire. Jill is its successor.

SPAN: 51 ft. 0 in.
LENGTH: 34 ft. 6 in.
MAX. SPEED: 222 m.p.h. at 8,500 ft.
SERVICE CEILING: 18,800 ft.

RESTRICTED

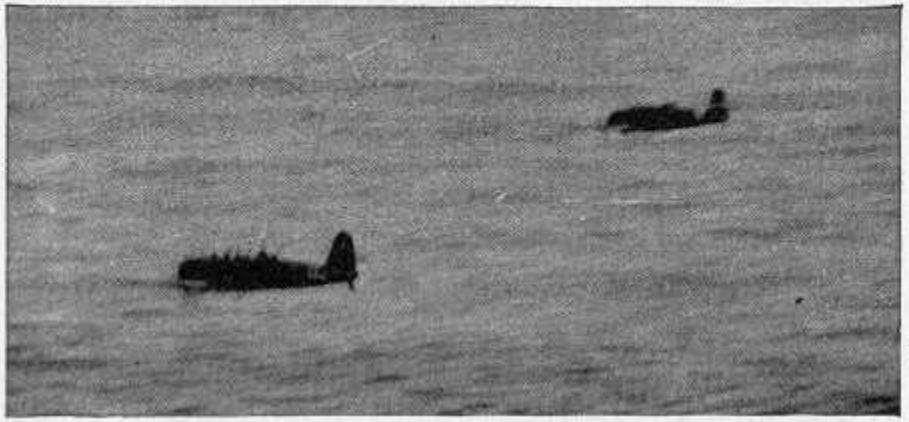


A



B

C

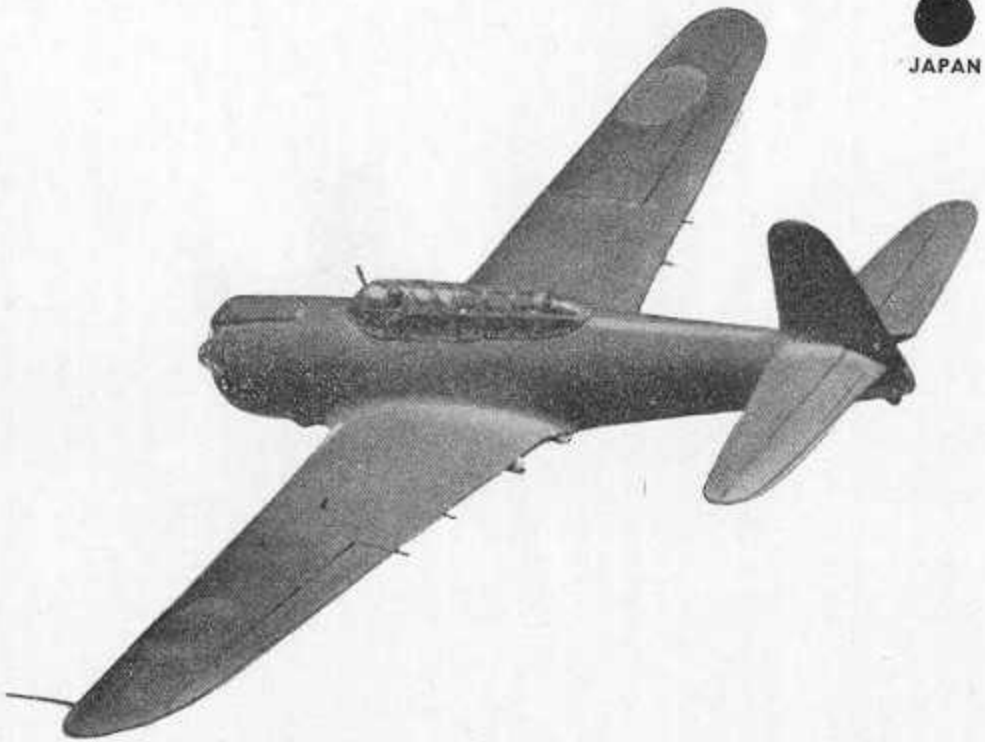


D

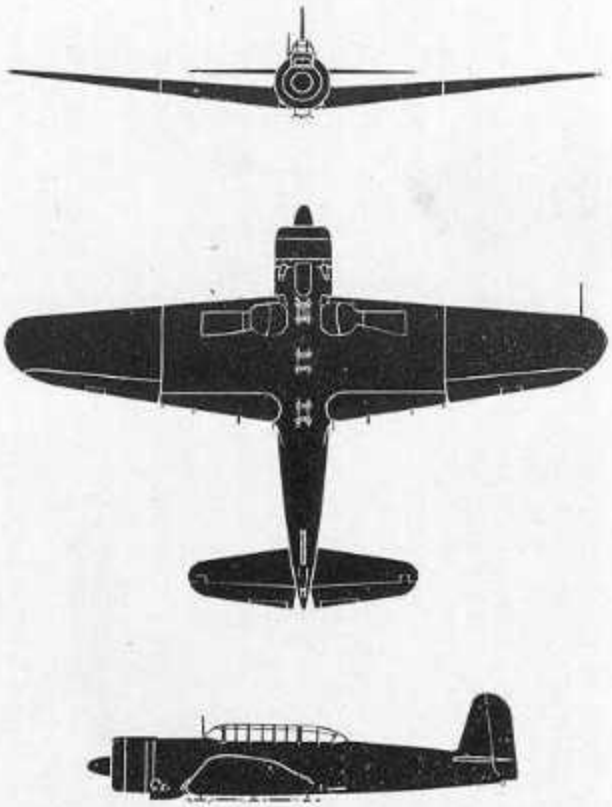
TORPEDO BOMBER

JAPAN

JILL



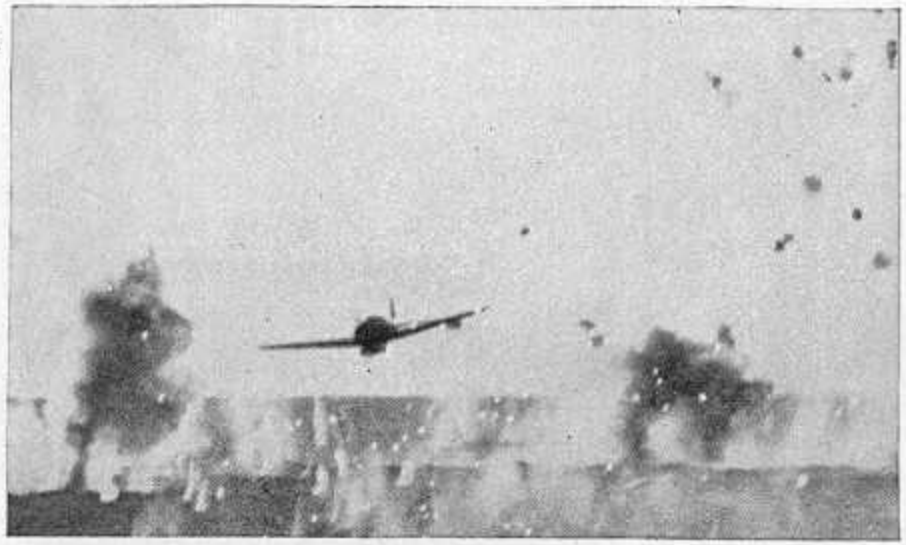
NAVY
NAKAJIMA
JAPAN



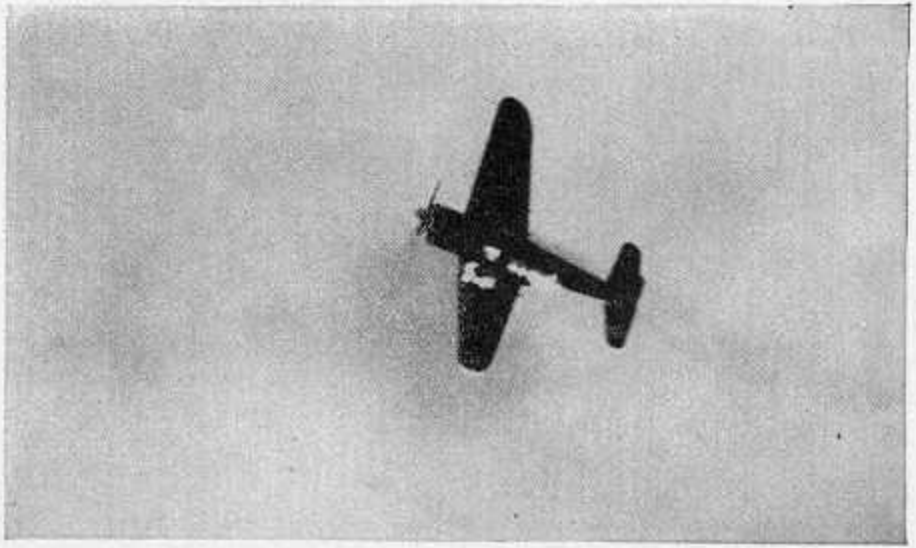
DISTINGUISHING FEATURES: Single-engine low-wing monoplane with single fin and rudder. Large spinner, cowling streamlined. Greenhouse breaks upper side of fuselage. Fin tapers steeply and rudder is pushed forward, giving tail an erect, set-forward appearance. Slightly more taper to trailing than leading edge of wing; tips are round. Equal taper to stabilizer surface with small bite in trailing edge apparent. Fuselage circular, wings thick at roots and dihedral from the root. Stabilizer is set low.

INTEREST: Jill is newest torpedo bomber. First thought to be modification of Kate, but later discovered to be a completely new design. Carries most powerful engine yet found in Jap aircraft. Fast on get-away.

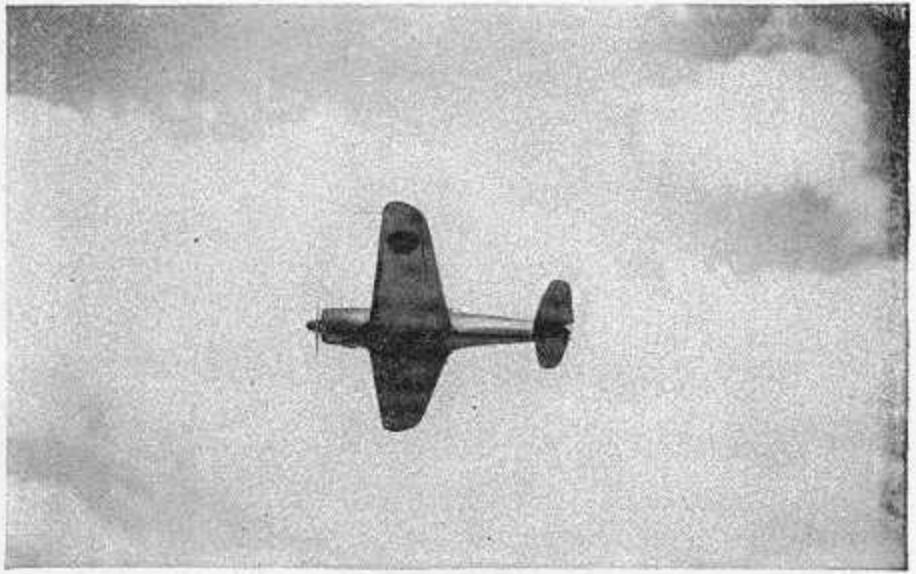
SPAN: 48 ft. 6 in.
LENGTH: 35 ft. 0 in.
MAX. SPEED: 329 m.p.h. at 12,500 ft.
SERVICE CEILING: 35,400 ft.



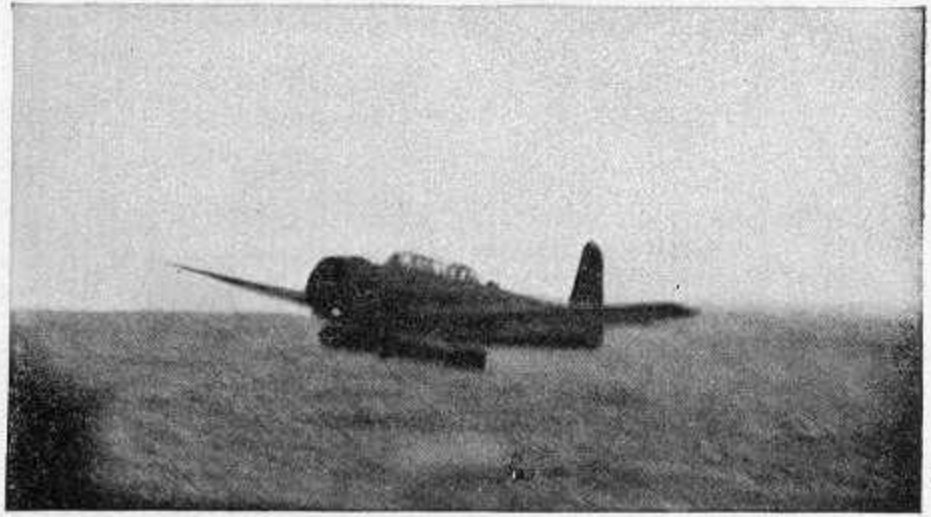
A



B



C

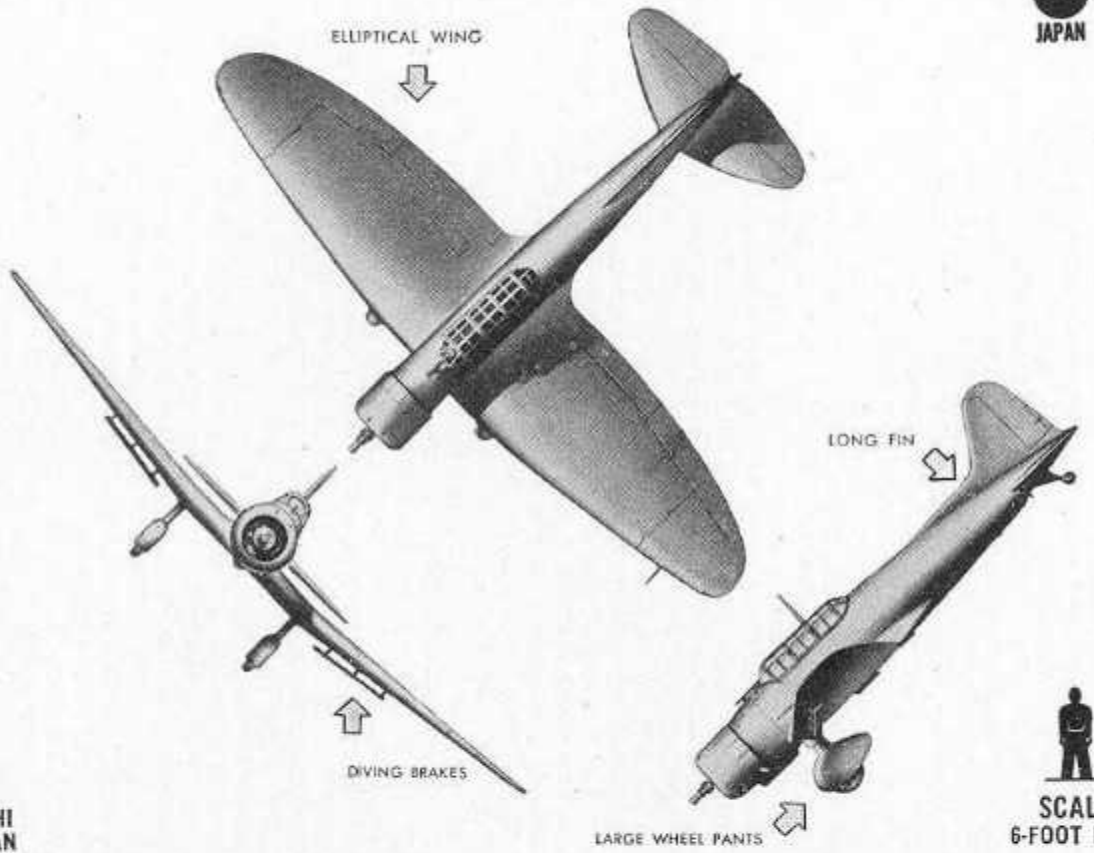


D

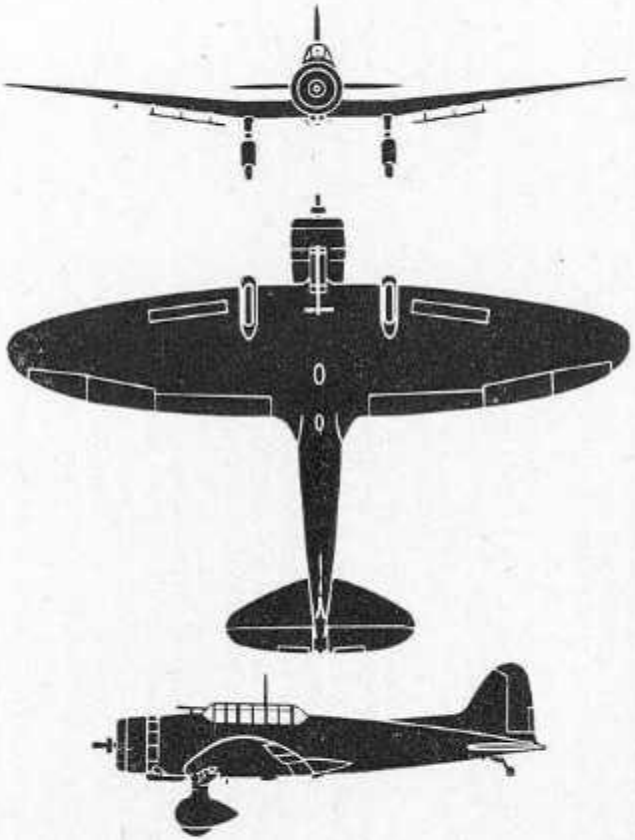
DIVE BOMBER

JAPAN

"VAL" TYPE 99 DB



SCALE
6-FOOT MAN



AICHI
JAPAN

DISTINGUISHING FEATURES: Radial engine low-wing monoplane. Fixed landing gear and junkers dive-brakes. Wings have medium taper and rounded tips. Slim tapering fuselage with protruding cockpit enclosure. Fin faired well forward on fuselage. Sharp taper to leading edge of stabilizer.

INTEREST: These Aichi-made planes were among those which struck so suddenly at Pearl Harbor defenses. It is the standard Jap Navy dive bomber, with two 7.7 mm. machine guns in the top forward cowling and one 7.7 mm. flexible gun in the rear cockpit. It has no armor nor does it have self-sealing gas tanks. Later models may possibly have retractable undercarriages.

SPAN: 47 ft. 7 in.
LENGTH: 32 ft. 10 in.
APPROX. SPEED: 220 m. p. h. at 7,500 ft.

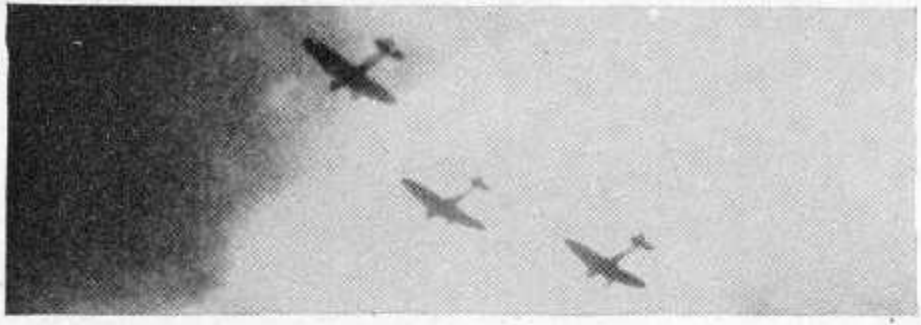
SERVICE CEILING.
27,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE.

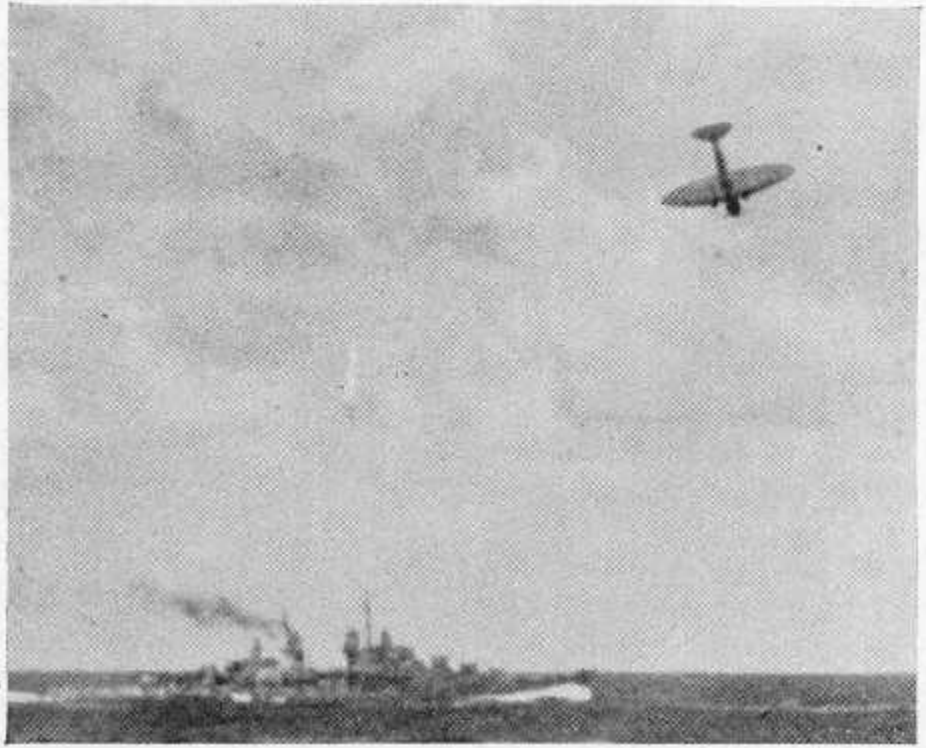
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A

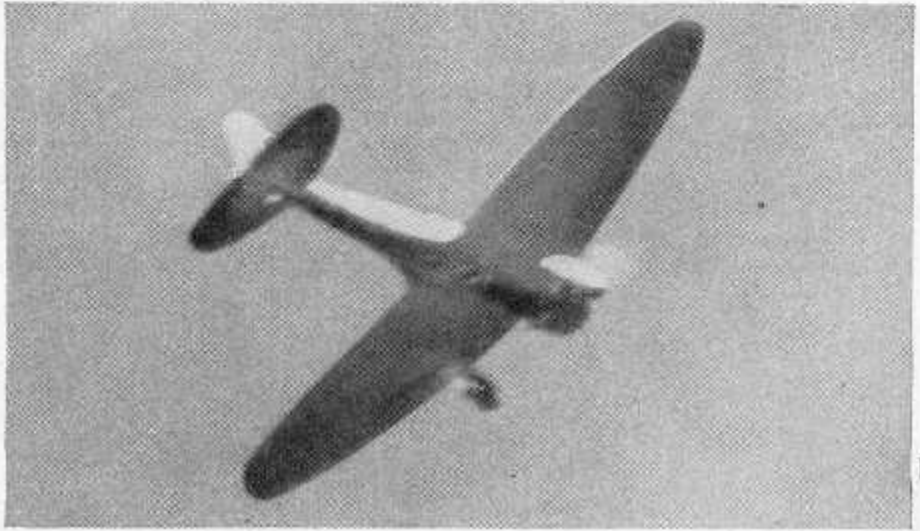


B



C

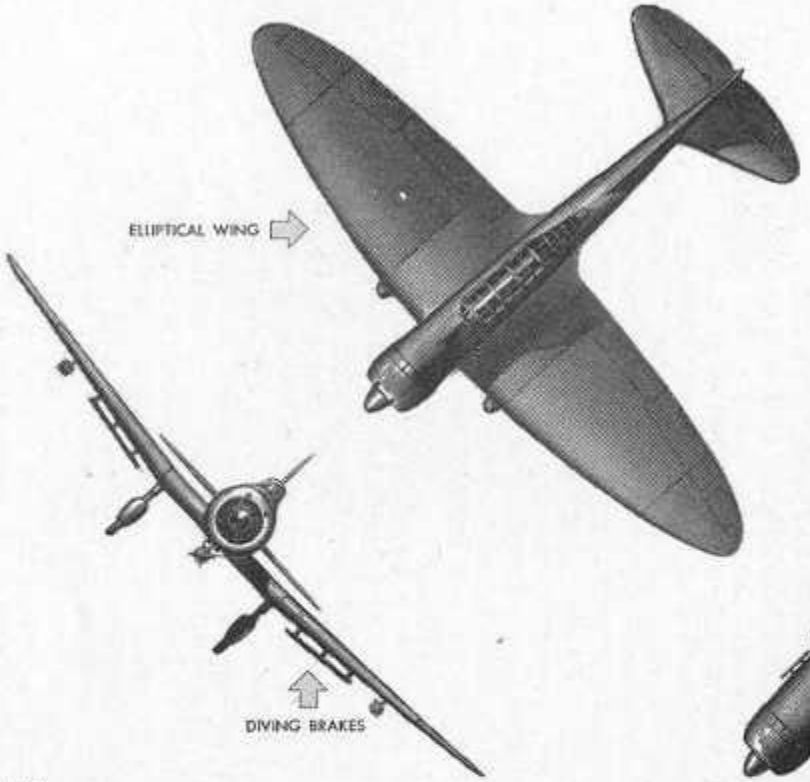
D



DIVE BOMBER

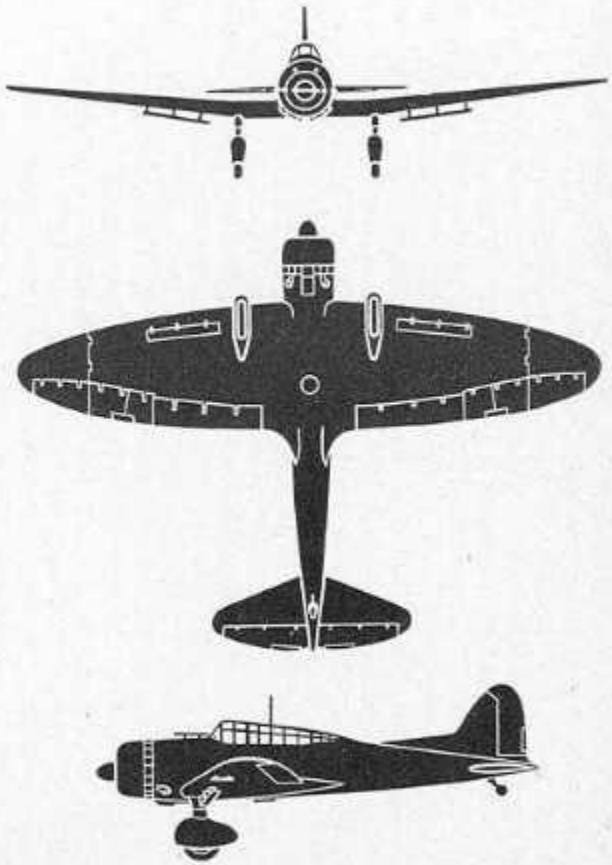
JAPAN

VAL II



AICHI
JAPAN

SCALE
6-FOOT MAN



SPAN: 47 ft. 8 in.
LENGTH: 33 ft. 9 in.
MAX. SPEED: 254 m. p. h. at 13,000 ft.
SERVICE CEILING: 29,800 ft.

DISTINGUISHING FEATURES: Single radial engine, low-wing monoplane. Wings have marked dihedral outboard of center sections. Elliptical-shaped wings with rounded tips and fillets. Long cockpit enclosure centered above wings fairs smoothly into fuselage. Bell-shaped fin and rudder fairs forward into fuselage. Tailplane has elliptical trailing edge and tapered leading edge. Fixed landing gear with wheel pants.

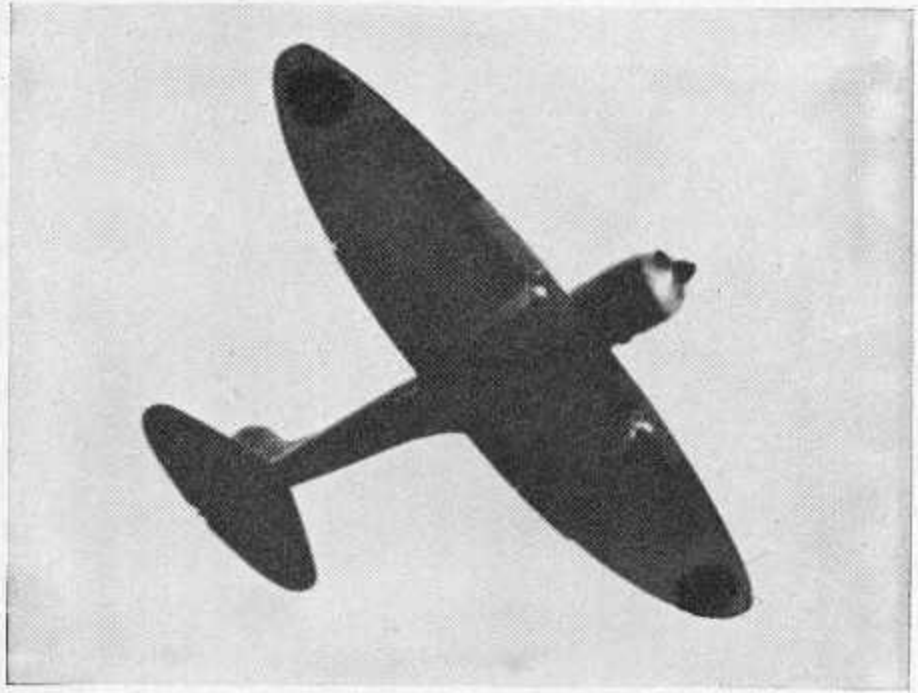
INTEREST: This second version of Val has a more powerful engine, faired cockpit enclosure, and narrower stabilizer. Armament consists of two 7.7-mm. machine guns in the top forward cowling and one 7.7-mm. flexible gun in the rear cockpit. Normal bomb load is 550 lb. Maximum bomb load is 1,050 lb. Val has been an effective but not a high performance dive bomber. Short dives at a 70° angle can be made. The customary angle is about 55°. No armor or self-sealing tanks have been found.

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

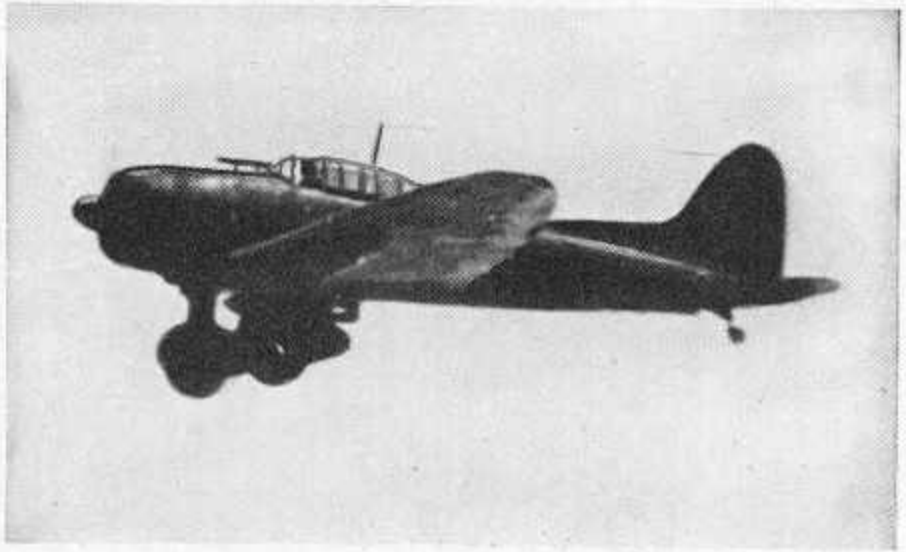
SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A

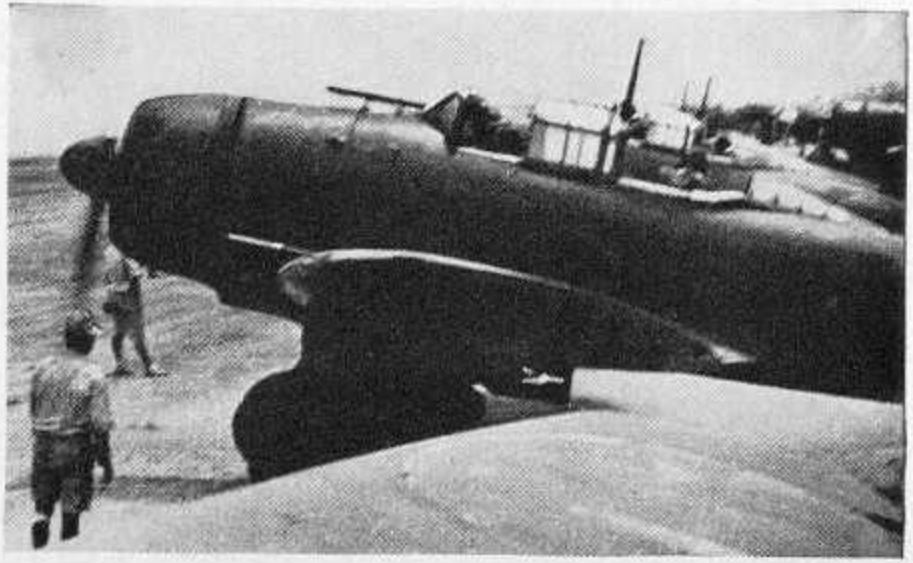


C



B

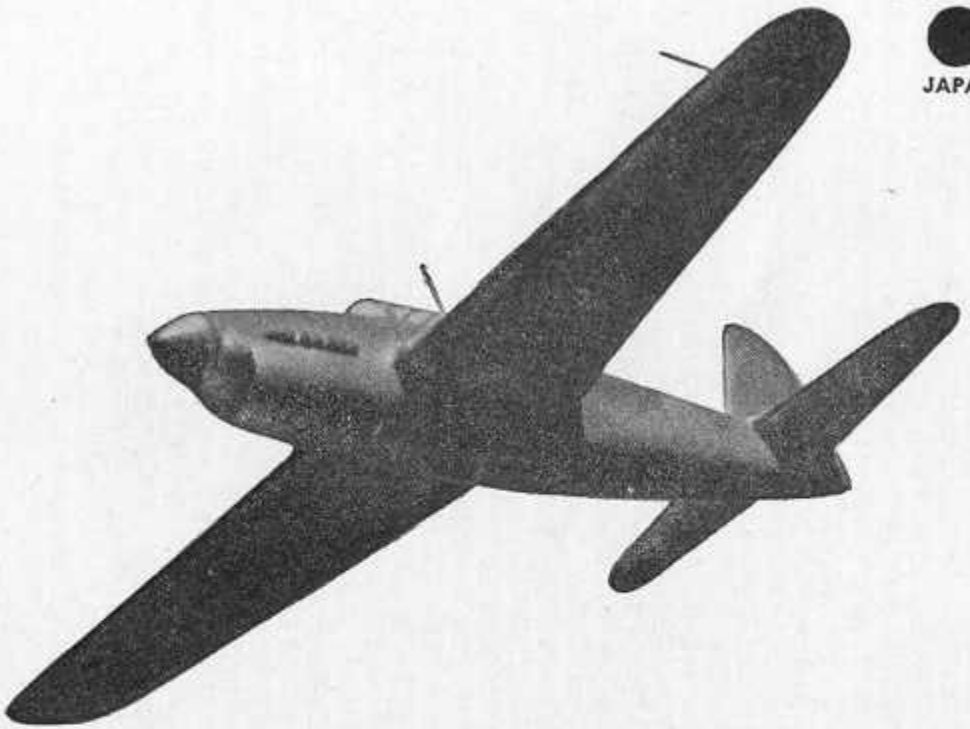
D



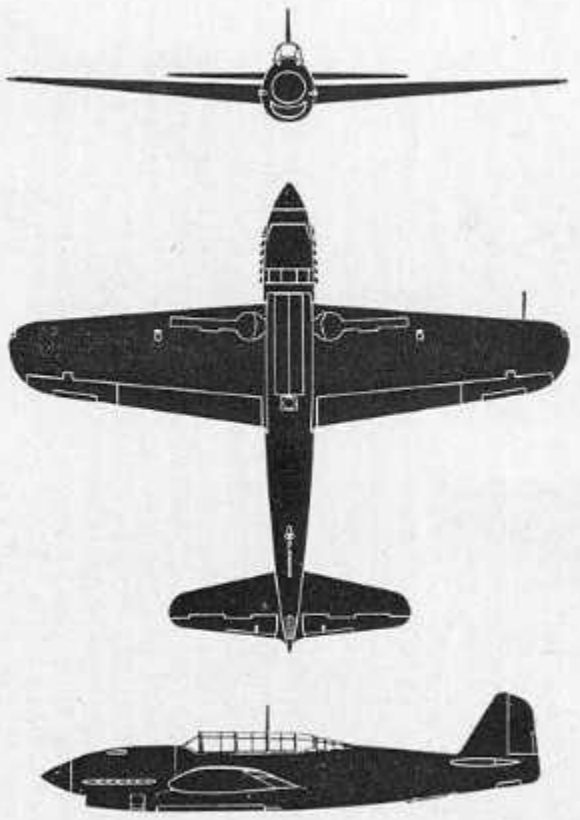
RECONNAISSANCE
DIVE BOMBER

JAPAN

JUDY



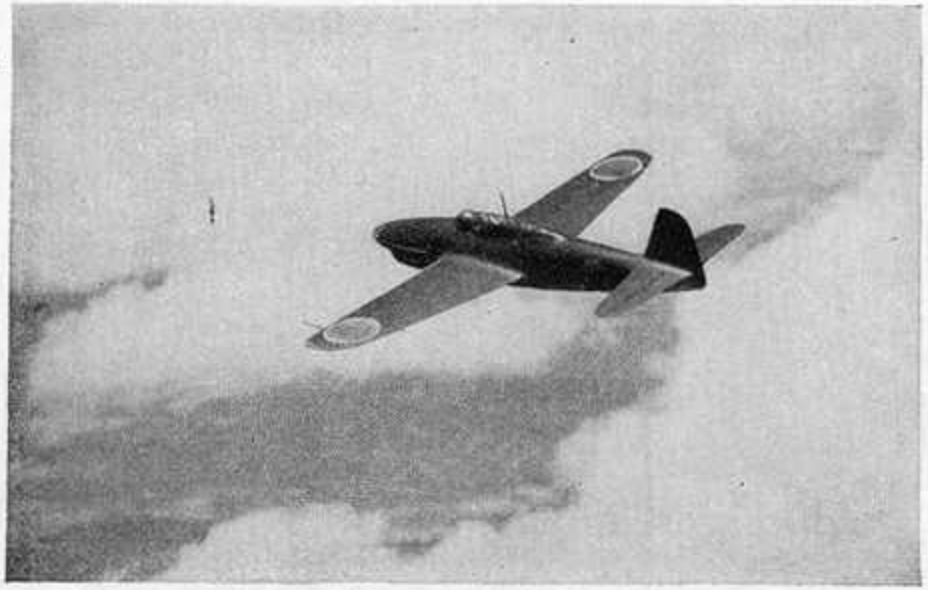
NAVY A1
AICHI
JAPAN



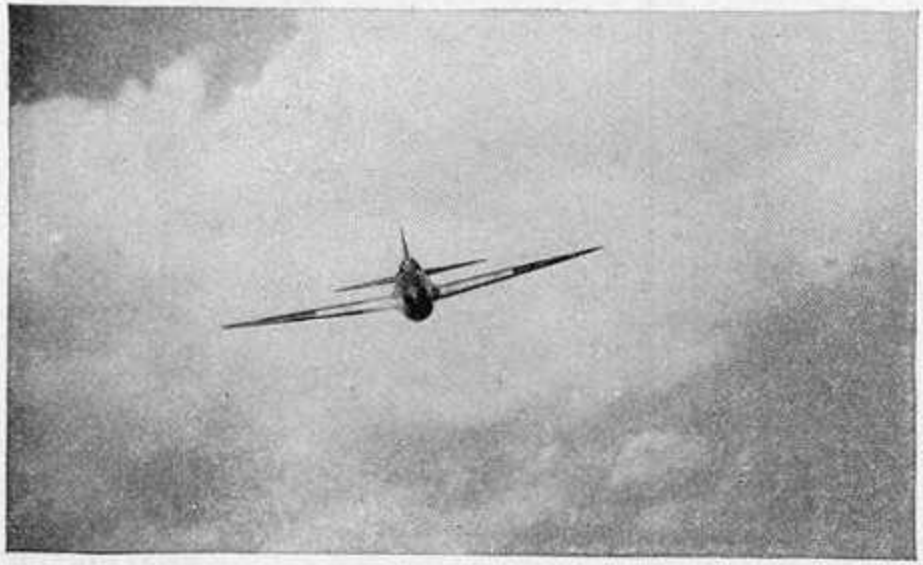
DISTINGUISHING FEATURES: Single in-line engine mid-wing monoplane with single fin and rudder. Engine is closely cowled from a large pointed spinner; greenhouse is smoothly faired both fore and aft. Tail has pushed-forward appearance. Radiator forms an abrupt bump in the bottom line of fuselage. Wing and tailplane surfaces have double taper with tips rounded.

INTEREST: Judy is used both for reconnaissance and dive-bombing. It is expected to replace Val because of greater range and speed. Armament light (2 x 7.7 mm machine guns forward and 1 x 7.7 mm machine gun top), and plane depends upon high speed get-away for safety. Very active wherever Jap fleet is carrier-based.

SPAN: 37 ft. 10 in.
LENGTH: 33 ft. 7 in.
MAX. SPEED: 332 m.p.h. at 16,000 ft.
SERVICE CEILING: 30,000 ft.

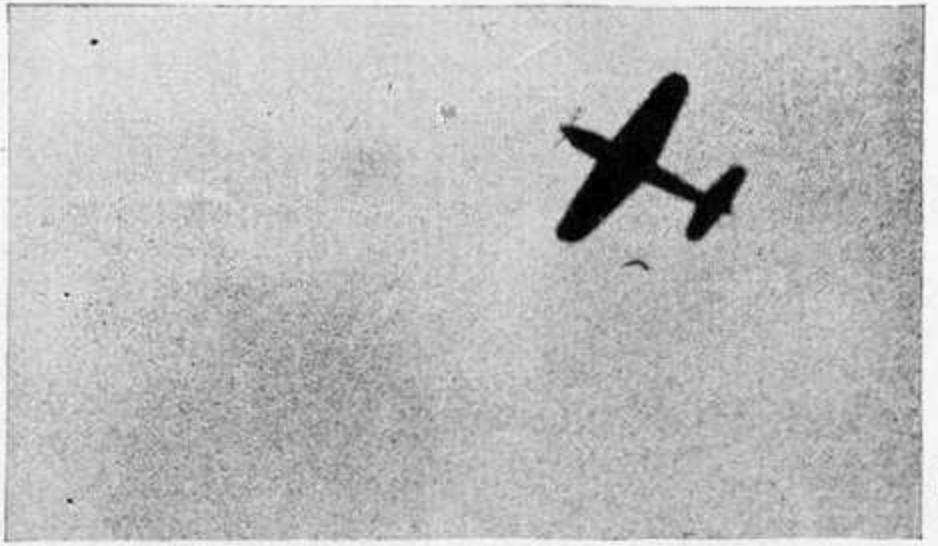


A



B

C



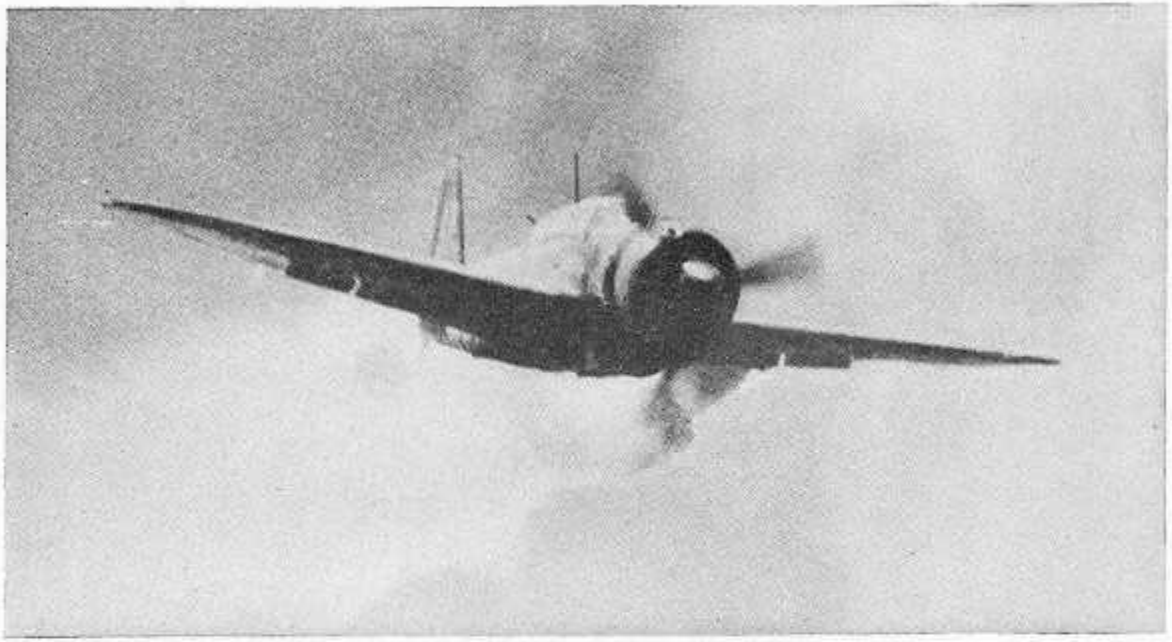
D

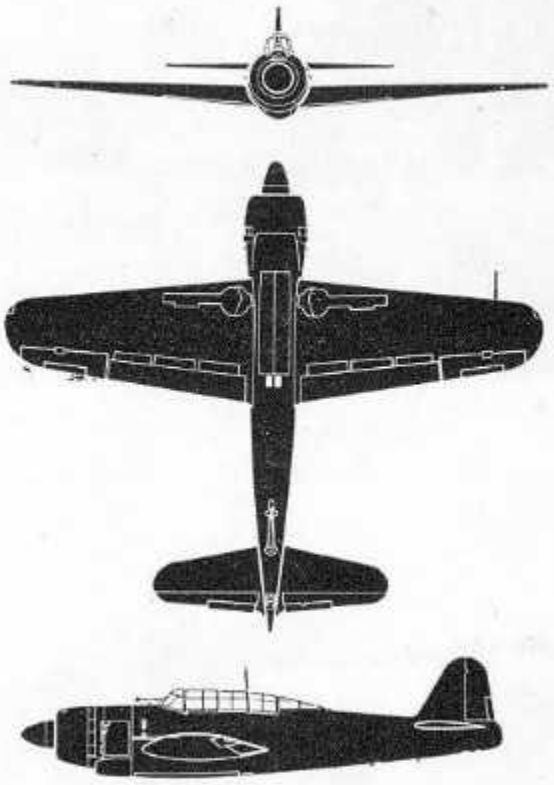
NAVY
AICHI
JAPAN

DIVE BOMBER, RECONNAISSANCE

JAPAN

JUDY

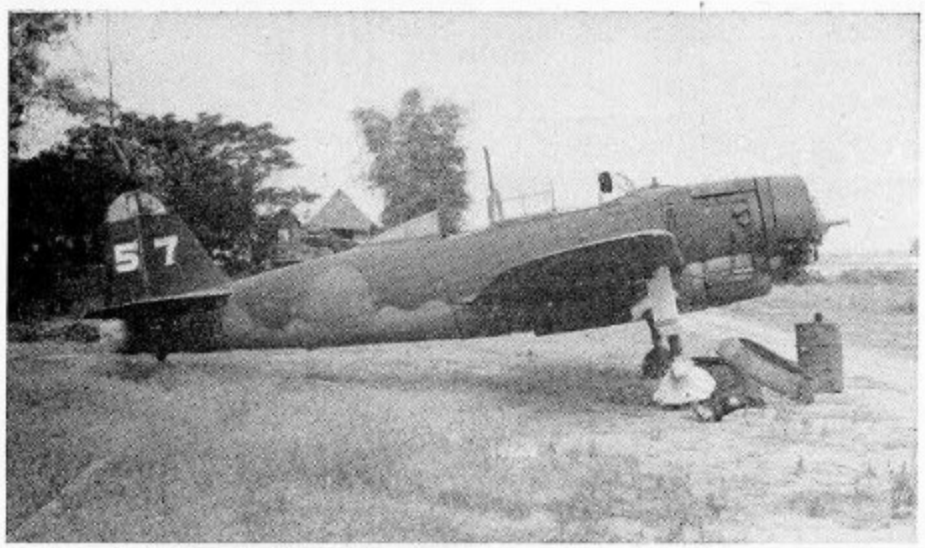




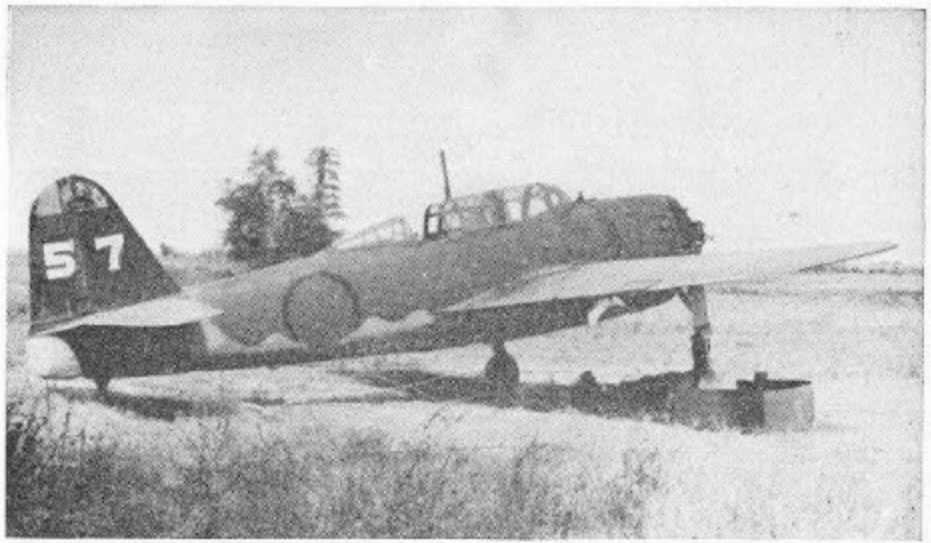
DISTINGUISHING FEATURES: Single-engine, low mid-wing monoplane. Recognitionally similar to earlier versions except for radial engine. Wing tapers to broad rounded tips. Long, low greenhouse slopes smoothly into fuselage aft. Broad, round tipped fin and rudder.

INTEREST: Judy 33 is a radial engined version of this Japanese Navy dive bomber and reconnaissance aircraft. The radial engine in Judy 33 will make it less vulnerable but slightly slower than the inline versions. Carrier-based, Judy has been used in suicide attacks on U. S. carrier task forces.

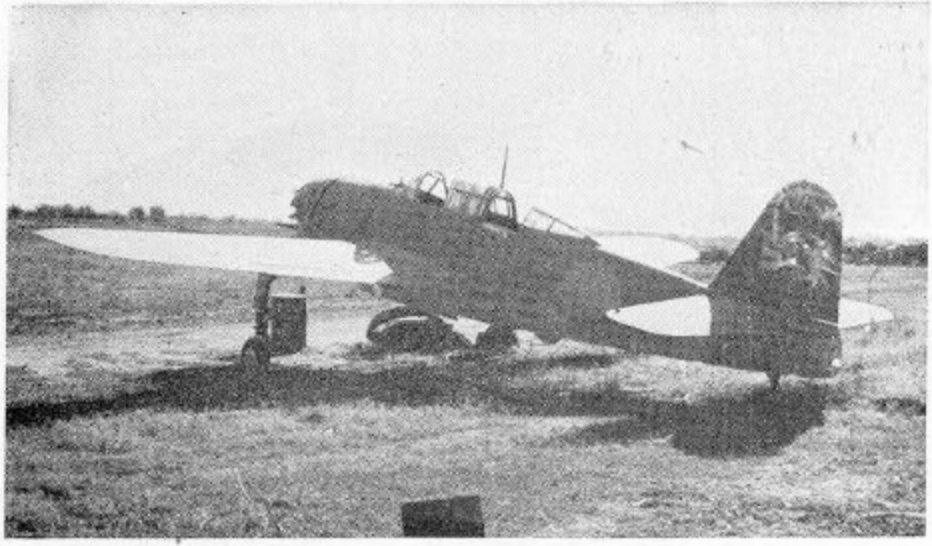
SPAN: 37 ft. 9½ in. **SERVICE CEILING:** 38,300 ft.
LENGTH: 33 ft. 6 in.
APPROX. MAX. SPEED: 376 mph at 18,500 ft.

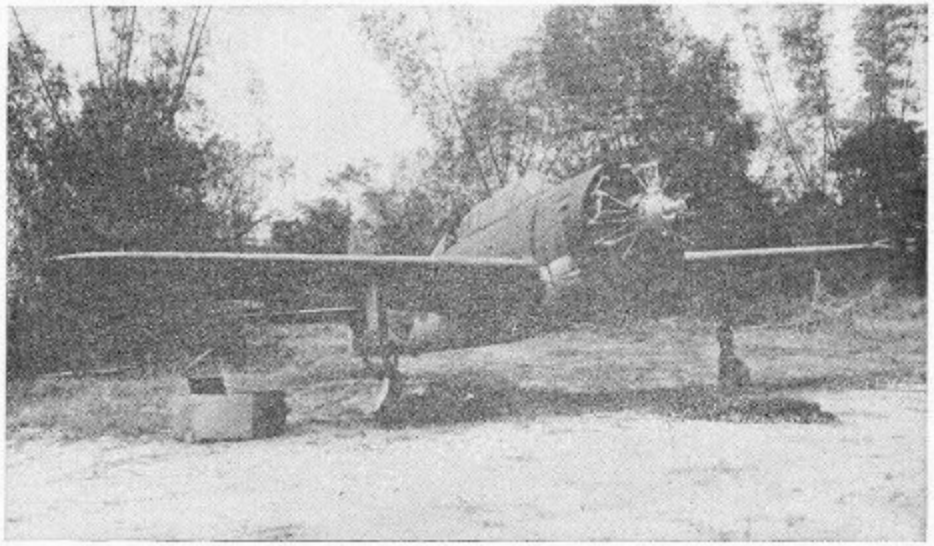


A ▲ B ▼



C ▲ D ▼

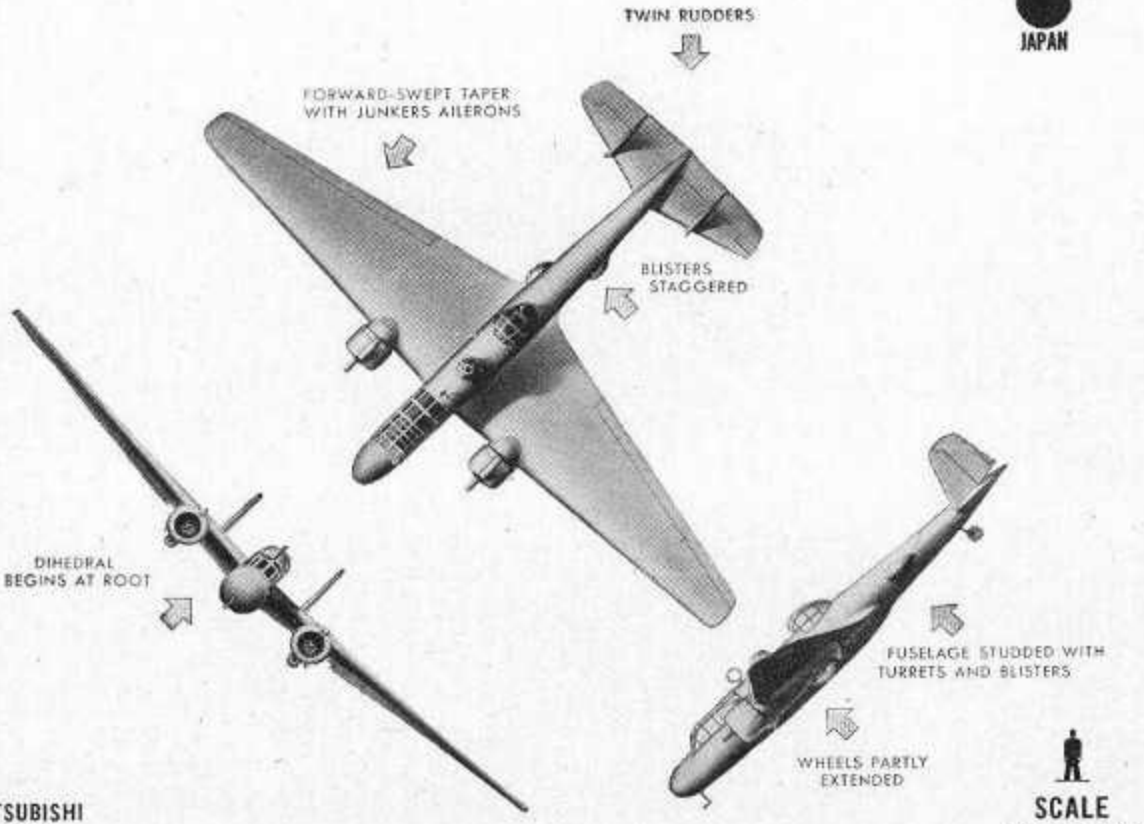


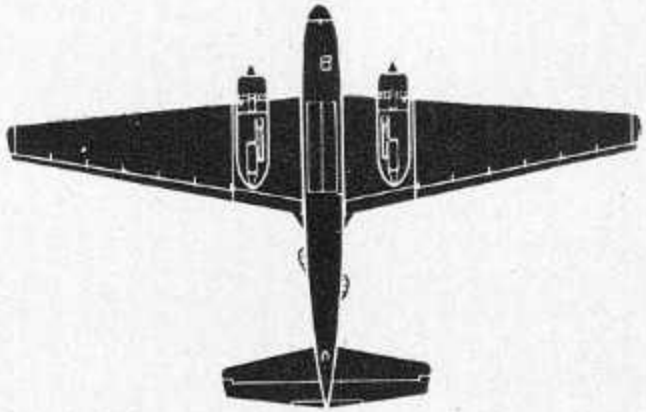


MEDIUM BOMBER

JAPAN

"NELL" TYPE 96 MK.4 MB





MITSUBISHI
JAPAN

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Two engine mid-wing monoplane. Tapered wings with squared tips. Full-length Junkers type ailerons. Underslung engines. Twin fins and rudders set inboard.

INTEREST: The high level bombing and torpedo attacks made on H. M. S. *Prince of Wales* and H. M. S. *Repulse* were made by these planes. Though the resemblance is rather remote, they are said to have been developed from the Junkers 86 and are used largely for bombing, torpedo dropping, and reconnaissance. Ordinarily the crew was made up of four, but more recently it has been increased to seven. Normal armament is reported to be five 7.7 mm. machine guns. May carry one 20 mm. cannon in dorsal turret.

SPAN: 82 ft.
LENGTH: 54 ft.
APPROX. SPEED: 225 m. p. h. at 7,000 ft.

SERVICE CEILING.
28,000 ft.

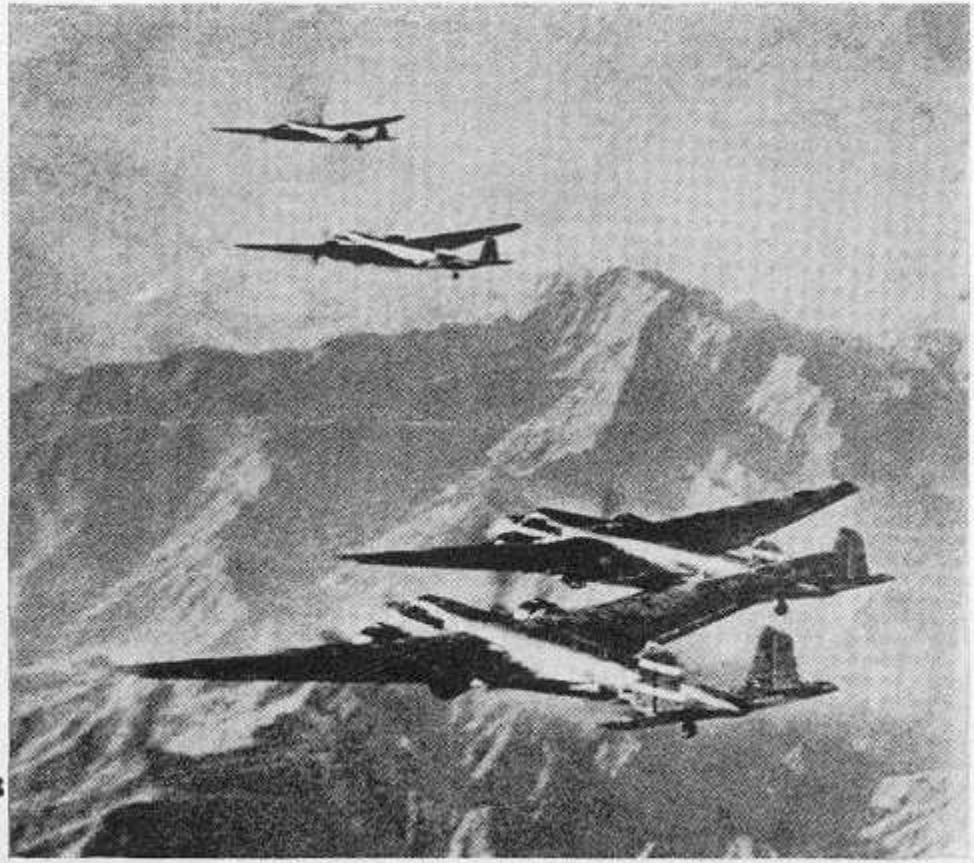
RESTRICTED

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

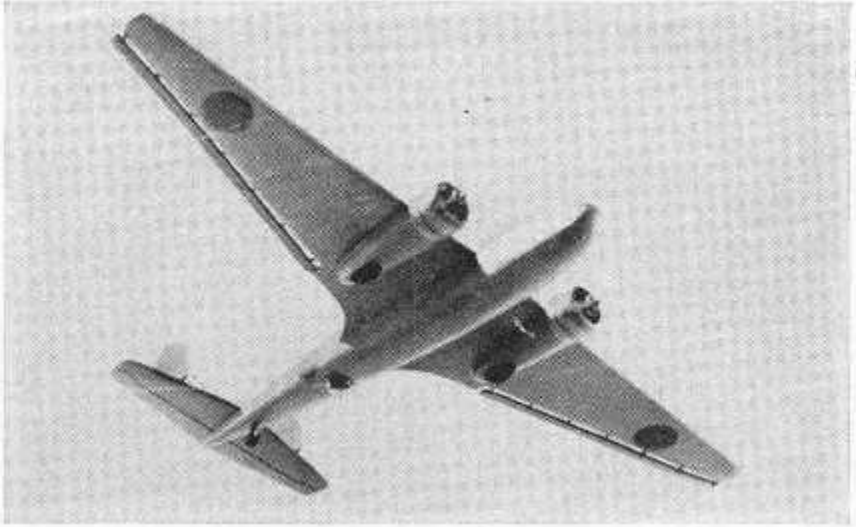
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

A

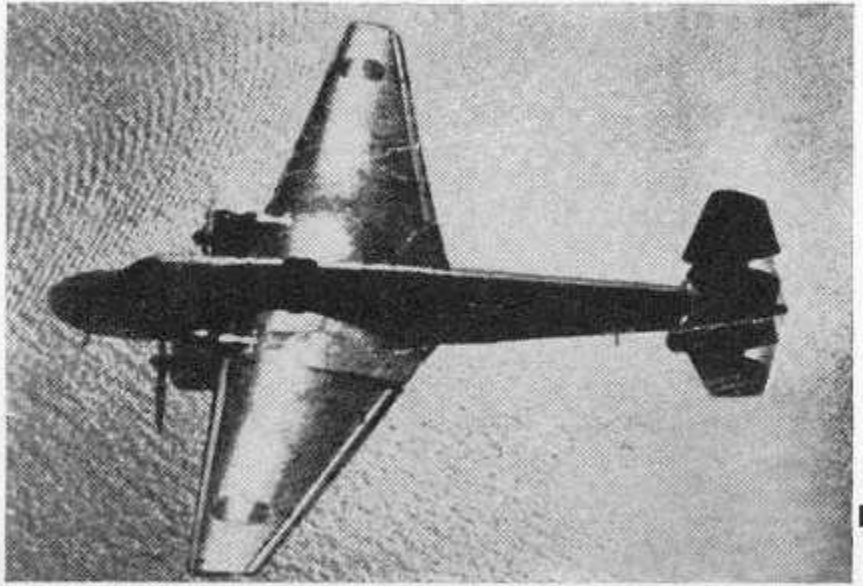
B



C



D

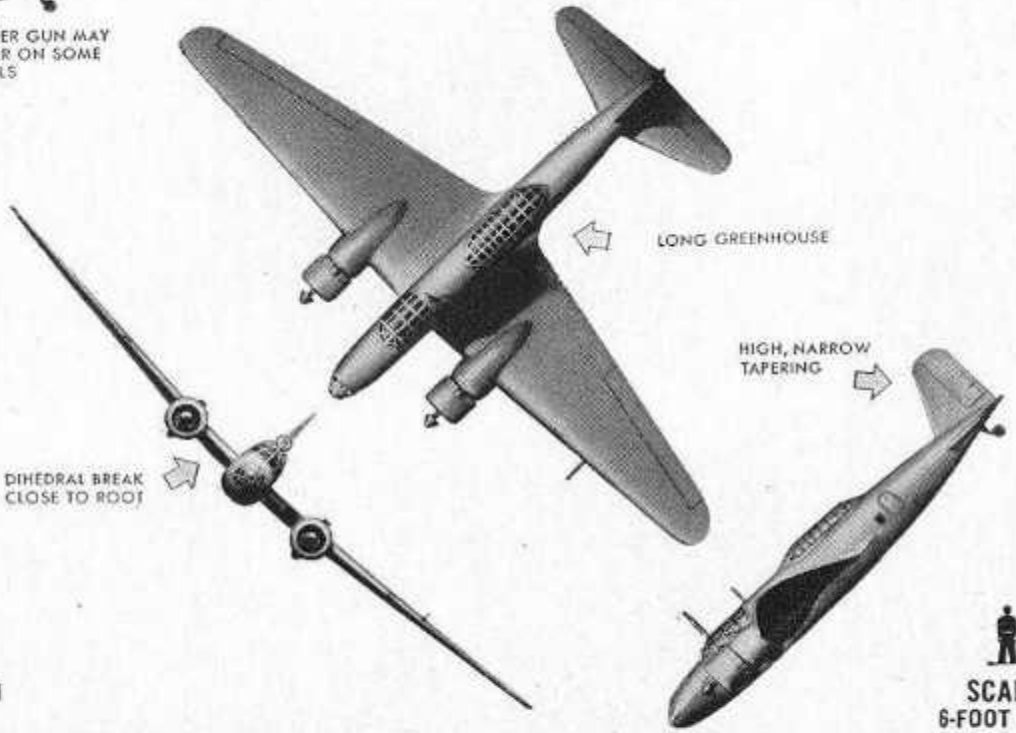


MEDIUM BOMBER

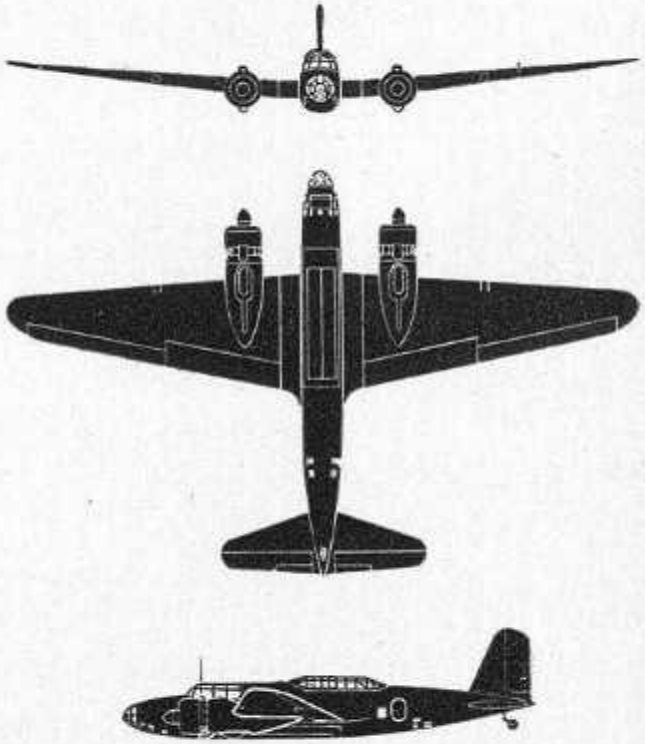
JAPAN

"SALLY" TYPE 97 MB

STINGER GUN MAY APPEAR ON SOME MODELS



SCALE
6-FOOT MAN



MITSUBISHI
JAPAN

DISTINGUISHING FEATURES: Twin-engine low mid-wing monoplane. Full length dihedral in wings. Trailing edge tapers sharply forward. Elliptical tips. Transparent nose and long dorsal cockpit enclosure, in two sections, extending aft of trailing edge of wing. Single fin and rudder with decided taper on leading edge and vertical trailing edge.

INTEREST: Latest reports indicate little, if any, armor protection for the crew of from five to seven men. Its armament is made up of seven 7.7 mm. flexible machine guns, and sometimes includes a fixed tail gun. In bombing operations the maximum load carried is 4,400 lbs., or normal load of 2,200 lbs. for 670 miles. A development of this aircraft, called "Gwen," and believed to be the "Army Type O twin-engine bomber," has recently been reported.

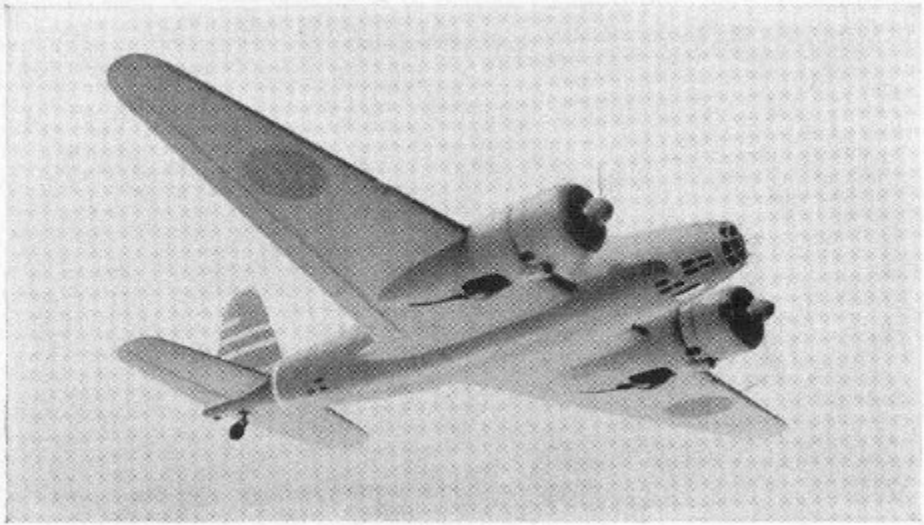
SPAN: 72 ft.
LENGTH: 47 ft. (approx.)
APPROX. MAX. SPEED: 245 m. p. h. at 8,000 ft.
SERVICE CEILING. about 23,500 ft.

RESTRICTED

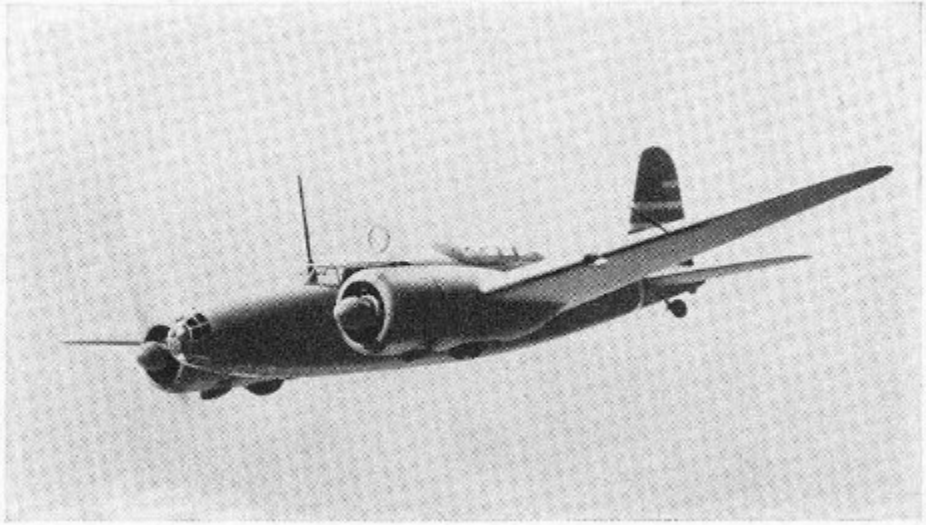
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

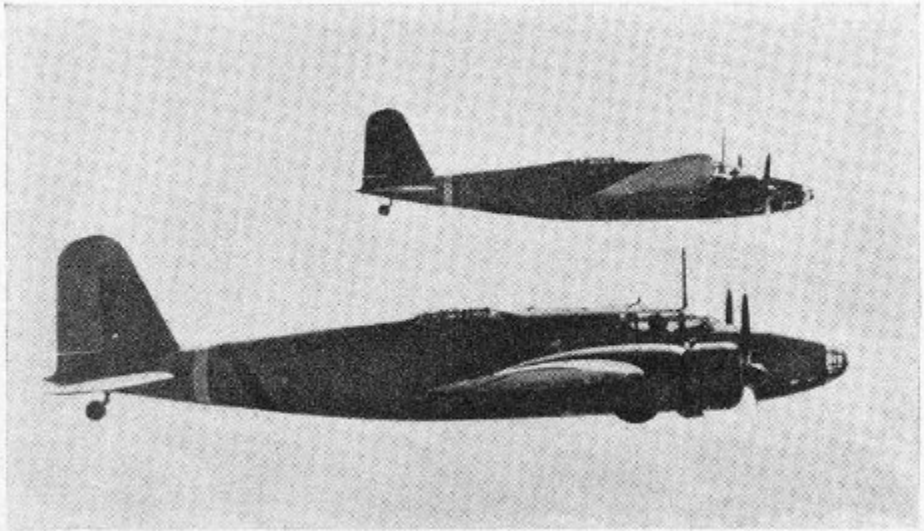
A



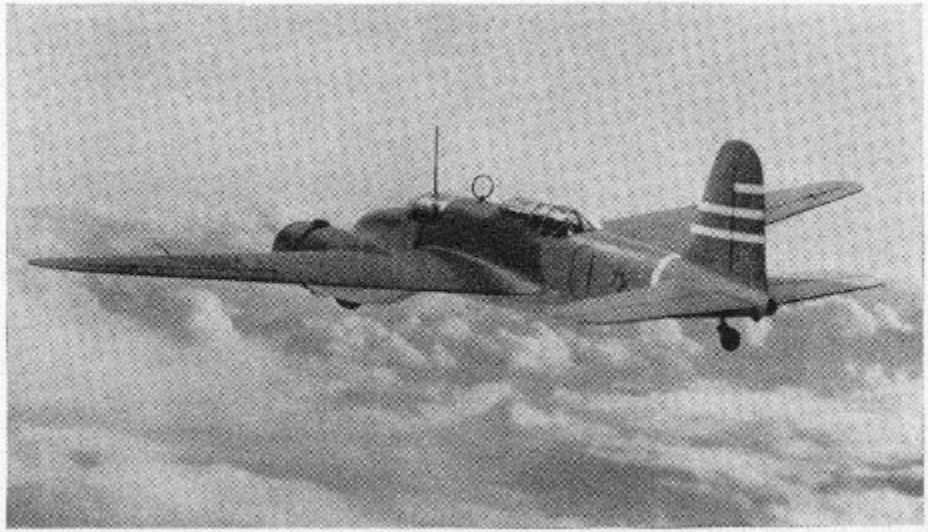
C



B



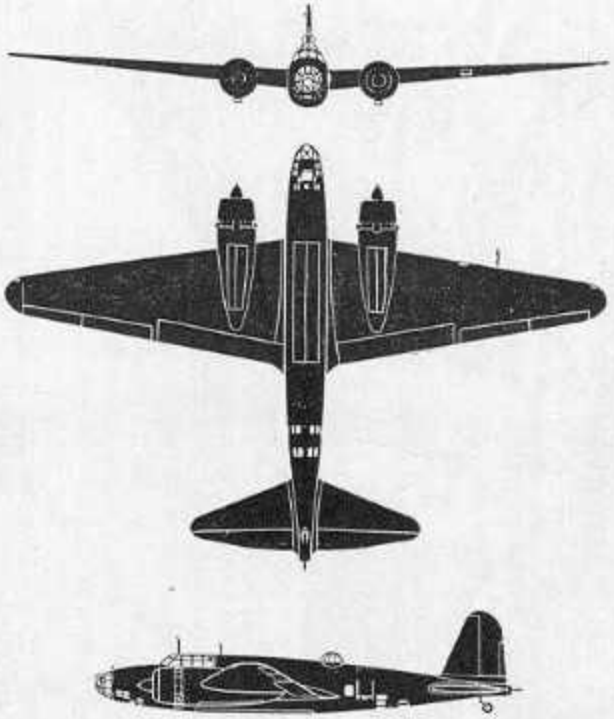
D



MEDIUM BOMBER

JAPAN

SALLY III



ARMY
MITSUBISHI
JAPAN

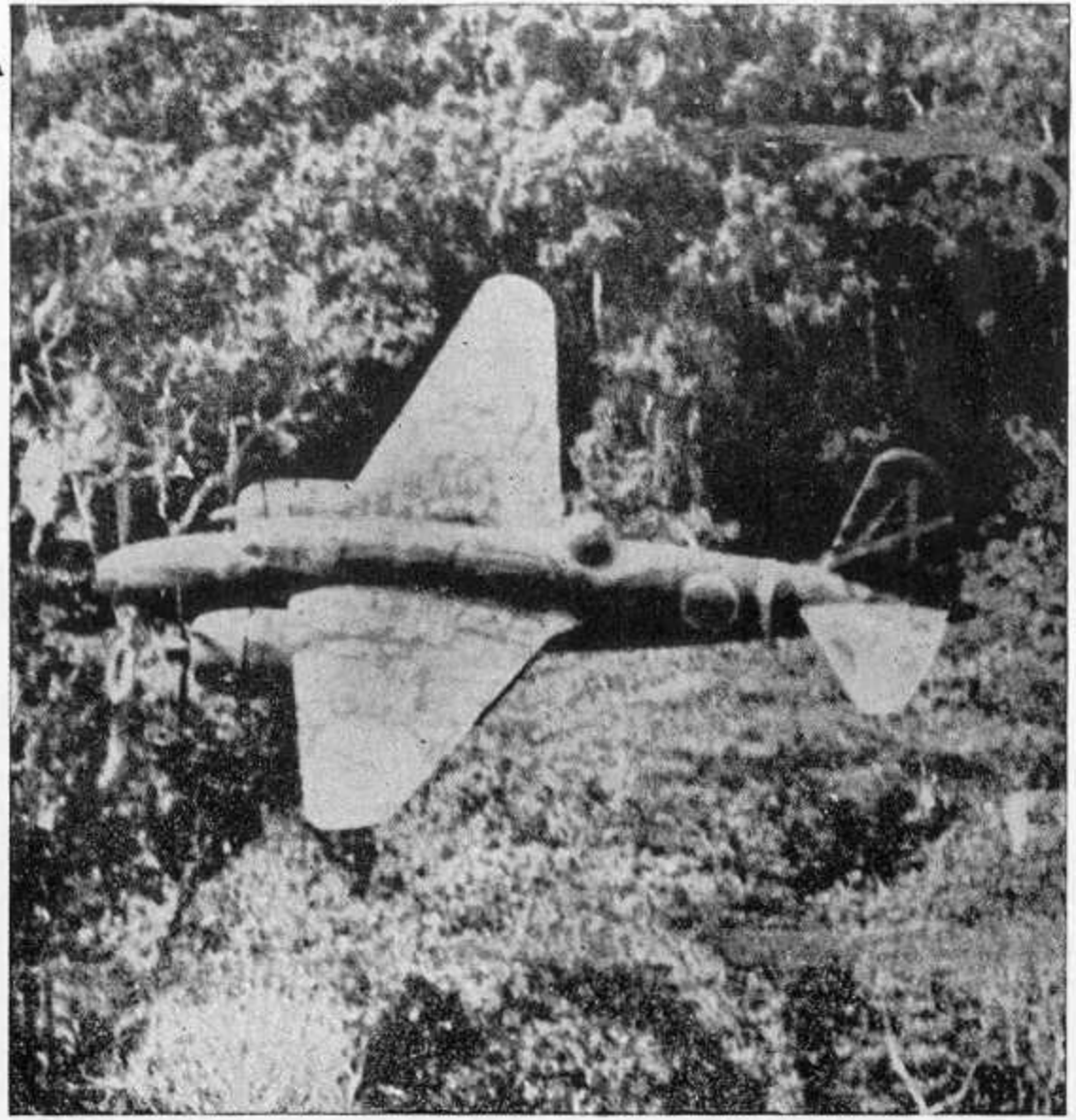
DISTINGUISHING FEATURES: Twin - engine mid-wing monoplane with single fin and rudder. Rounded, glass nose, similar to B-26. Except for turret, dorsal side of fuselage is smooth from cockpit to tail, and ventral side only slightly curved. Fin has decided taper, top is rounded, and rudder is vertical. Wings have double taper and tips are rounded. Leading edge of horizontal stabilizer tapers considerably, tips are rounded, and trailing edge is slightly rounded. Fuselage circular, engines underslung, stabilizer set low. Fin and rudder medium high.

INTEREST: Sally has been most active of Jap Army bombers until recent advent of Helen. Still seen in large numbers. It was first Jap bomber with tail stinger, turret, armor plating, and full protection. Earlier models had two-step greenhouse instead of turret. Active against land targets.

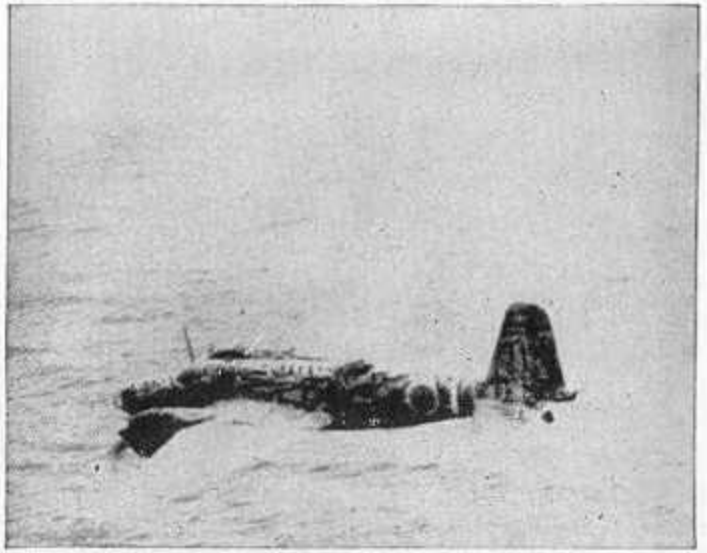
SPAN: 74 ft. 8 in.
LENGTH: 52 ft. 0 in.
MAX. SPEED: 283 m.p.h. at 14,500 ft.
SERVICE CEILING: 29,900 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

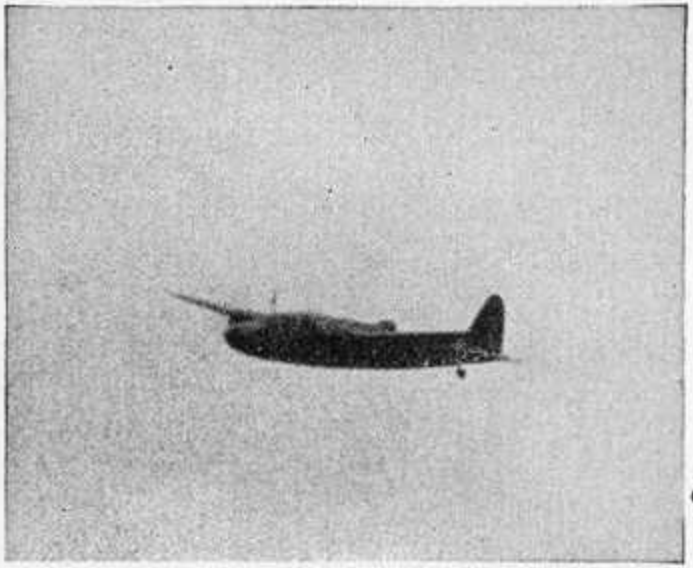
RESTRICTED



A



B

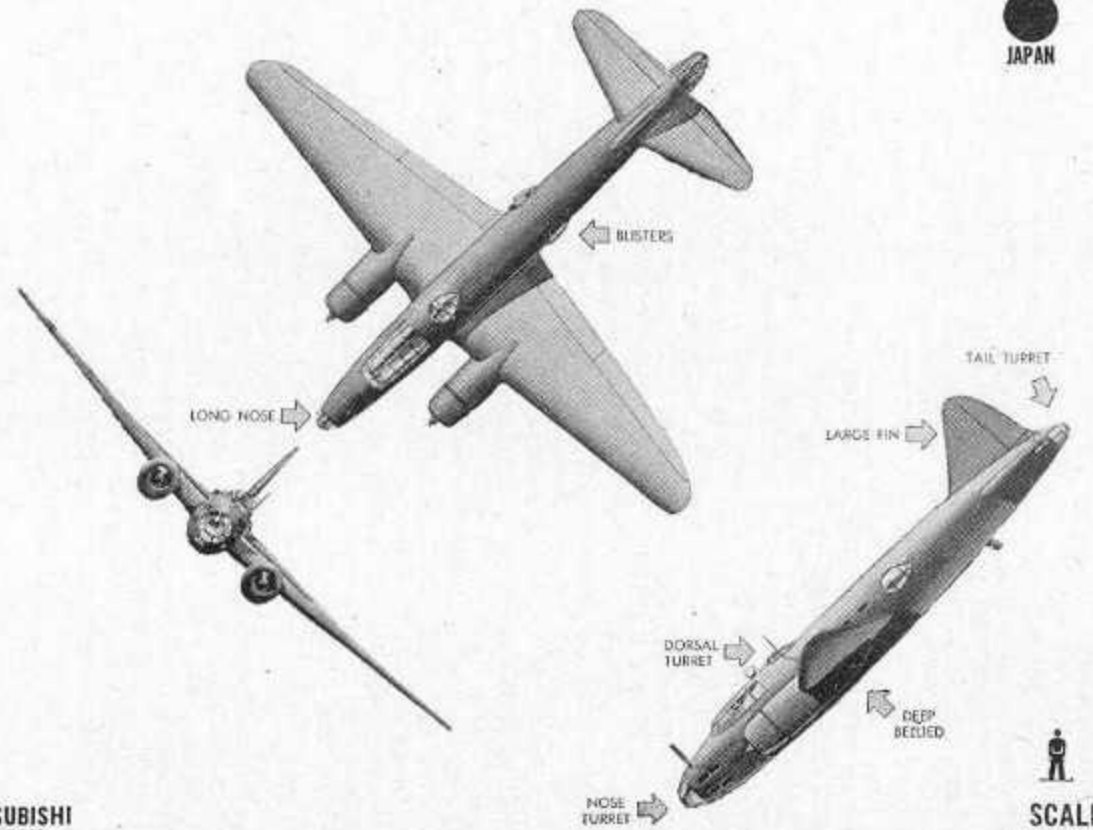


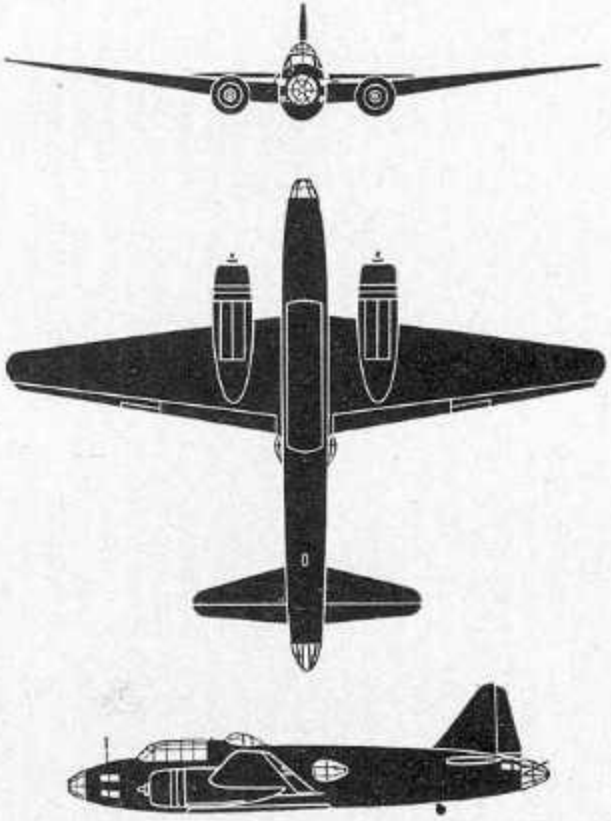
C

MEDIUM BOMBER

JAPAN

"BETTY" TYPE 1 MB





MITSUBISHI
JAPAN

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Twin engine mid-wing monoplane. Dihedral from roots. Wings tapered with rounded tips. Radial engines closely set. Thick fuselage has transparent nose and tail. Dorsal turret and side blisters. Triangular single fin and rudder. Tapered stabilizer.

INTEREST: One of the latest of Japan's bombers, this plane has a high performance and carries a heavy load of bombs or torpedoes. It is in use by both the Japanese Army and Navy and carries a crew of from five to seven. One 7.7 mm. machine gun is mounted in the nose, one in the top turret, and one in each side blister. In addition, it has a 20 mm. cannon in the tail. Although a modified form of self-sealing material has been found on the fuel tanks in the wings, the aircraft is extremely vulnerable to fire.

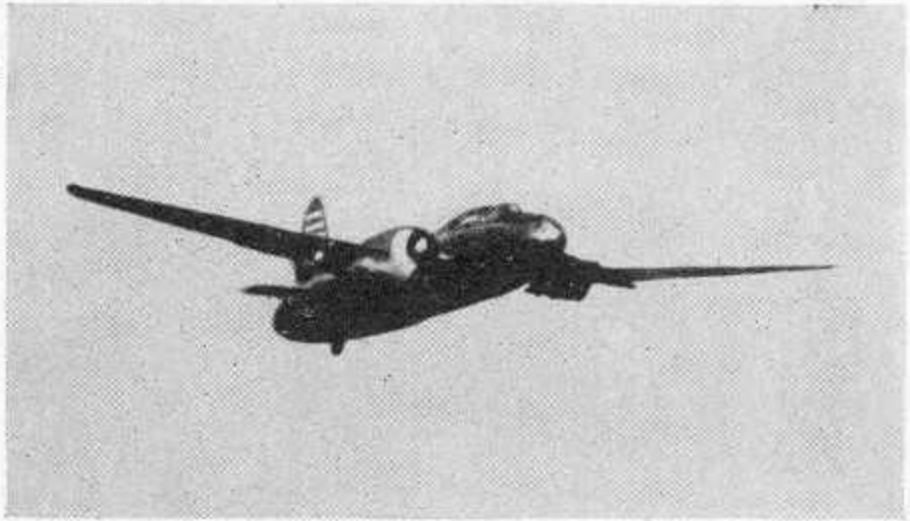
SPAN: 79 ft. 8 in.
LENGTH: 64 ft. (approx.)
APPROX. SPEED: 288 m. p. h. at 13,500 ft.
SERVICE CEILING: 30,000 ft.

RESTRICTED

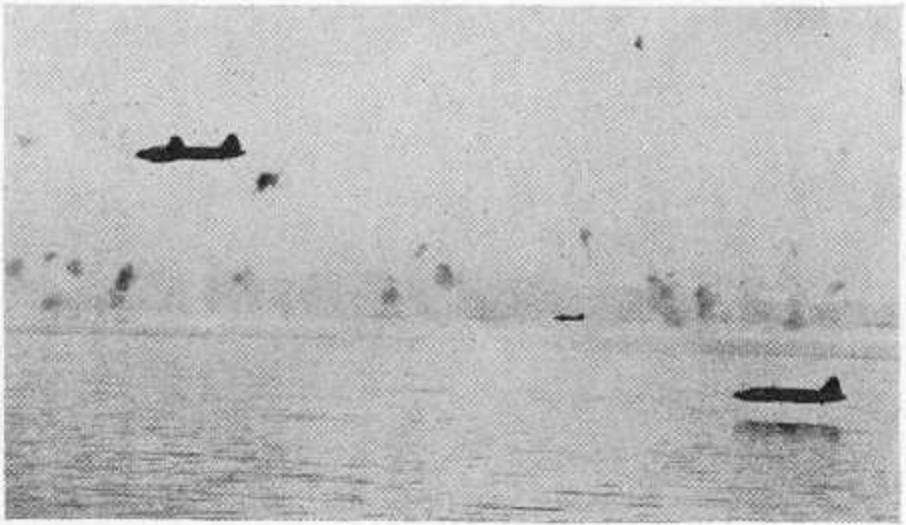
APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

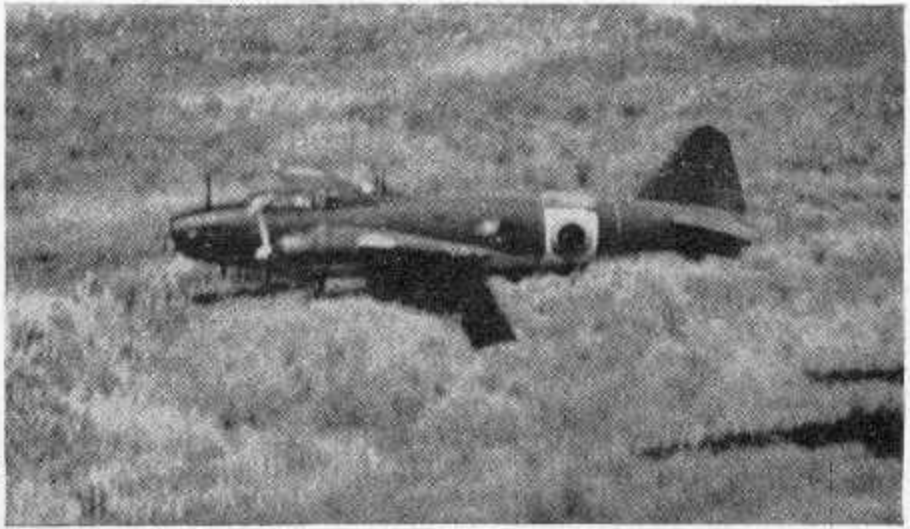
A



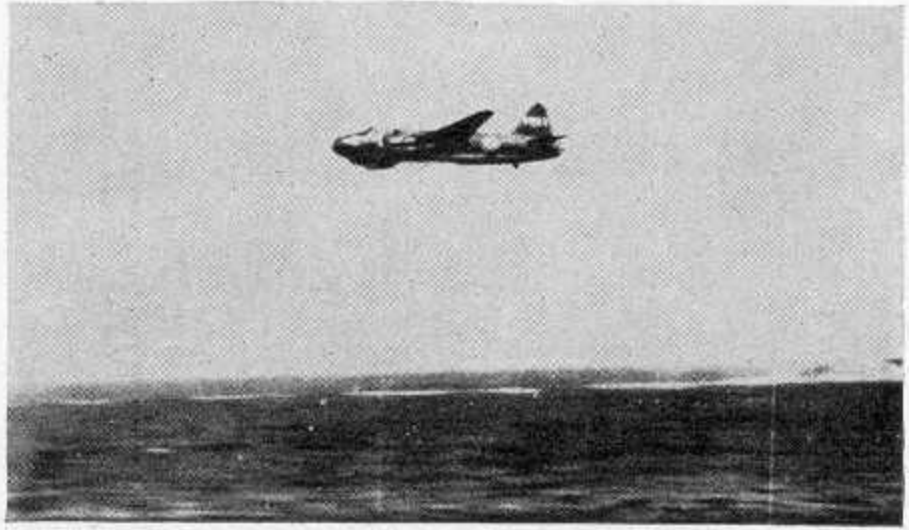
C



B



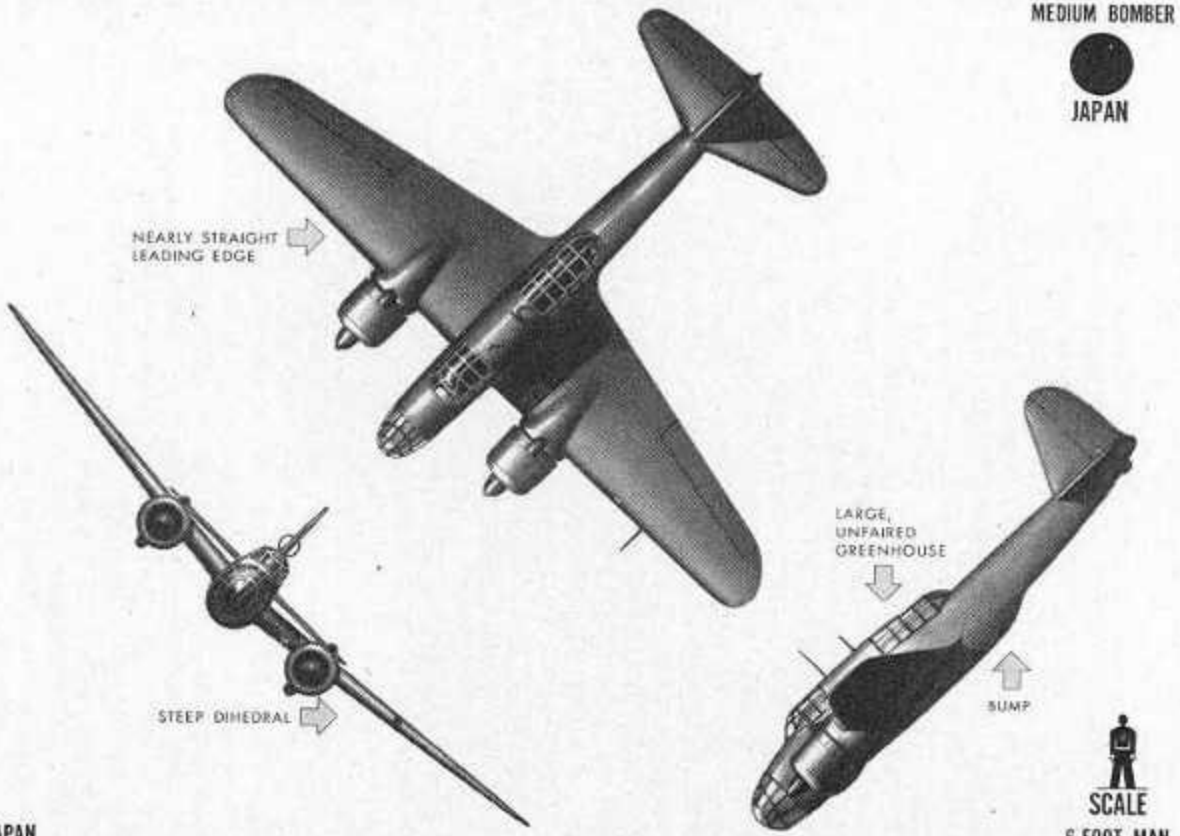
D



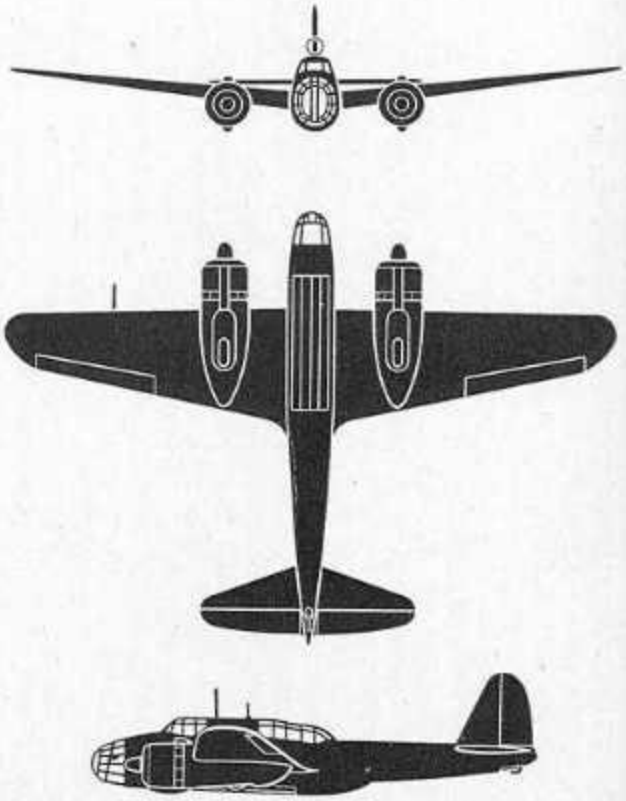
MEDIUM BOMBER

JAPAN

LILY



JAPAN



DISTINGUISHING FEATURES: Twin-engine, mid-wing monoplane. Wings are tapered, more on trailing edge than on leading edge. Rounded wing tips. Engines are underslung. Slab-sided fuselage narrows abruptly aft of trailing edge of wing. Rounded nose extends beyond engines and fuselage is broken by large, unfaired greenhouse. Fin and rudder has tapered leading edge with rounded top and curved trailing edge. Tailplane has tapered leading edge, curved trailing edge, with sharply rounded tips.

INTEREST: Lily is often referred to as the "Baltimore" type, since it bears a striking resemblance to the U. S. A–30 Martin "Baltimore" bomber. Carrying a crew of four, Lily is used as a bomber and for reconnaissance. The bomb load carried is 800 pounds stowed internally.

SPAN: 56 ft. 11 in.

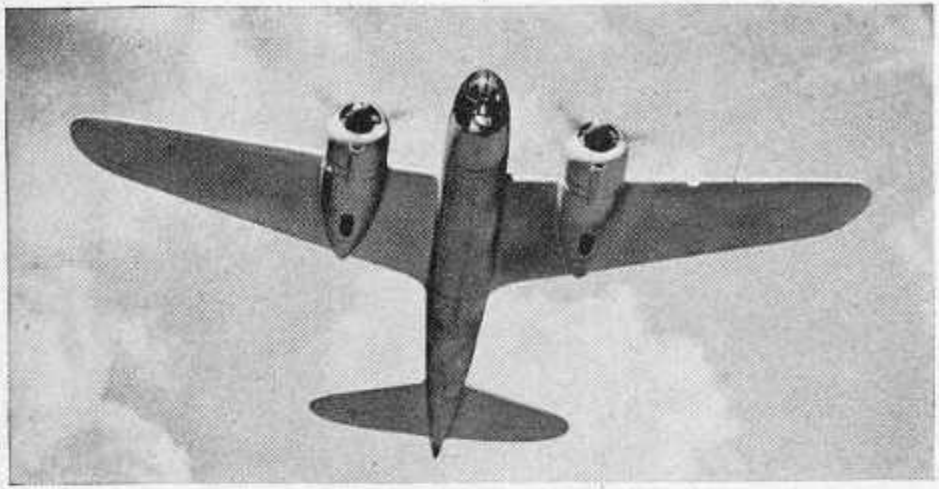
LENGTH: 47 ft. 3 in.

SERVICE CEILING: 28,200 ft. with normal load.

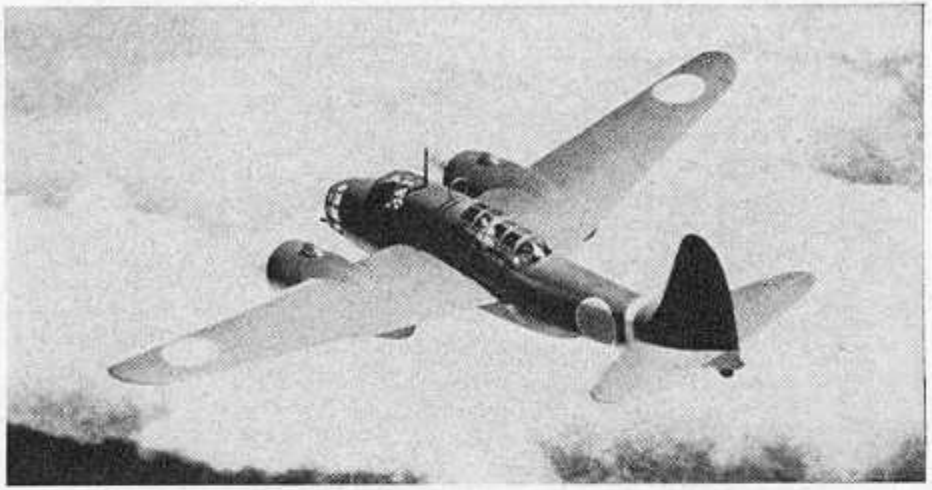
ESTIMATED SPEED: 278 m. p. h. at 10,000 ft.

RESTRICTED

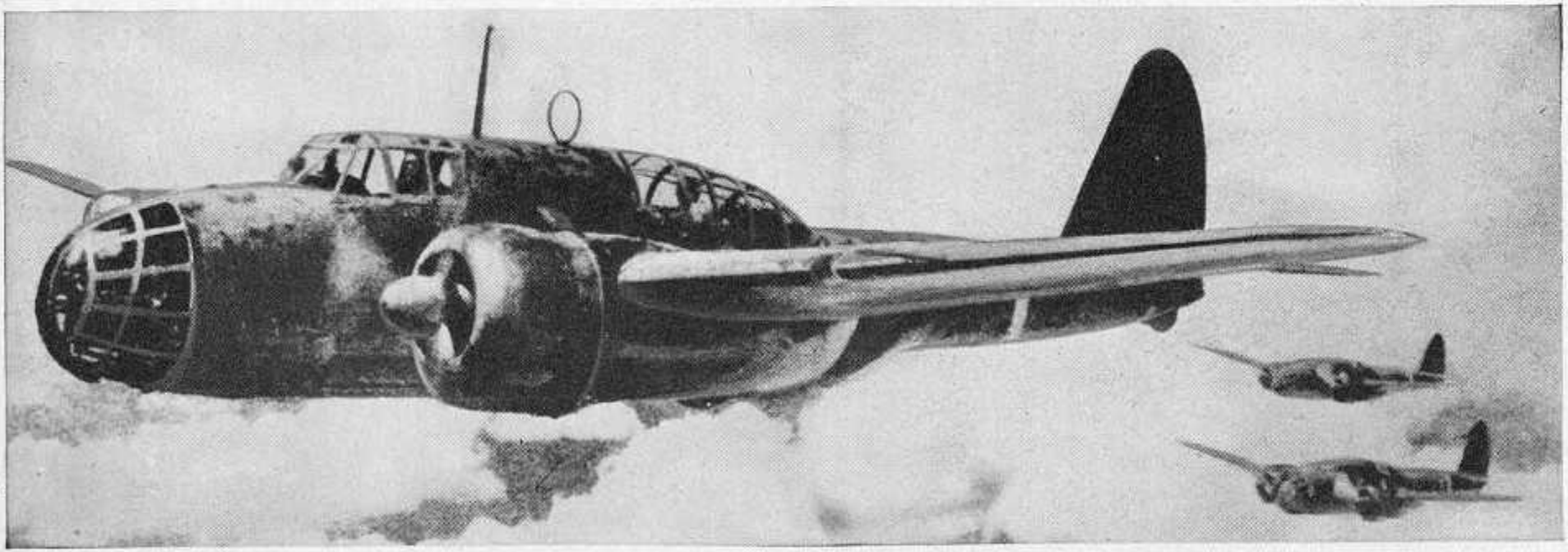
A



B



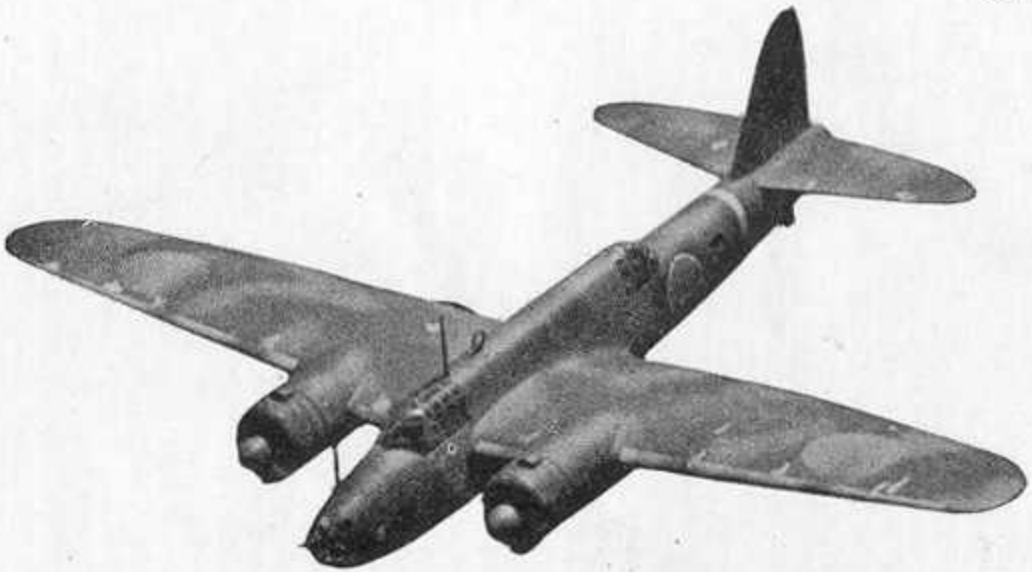
C

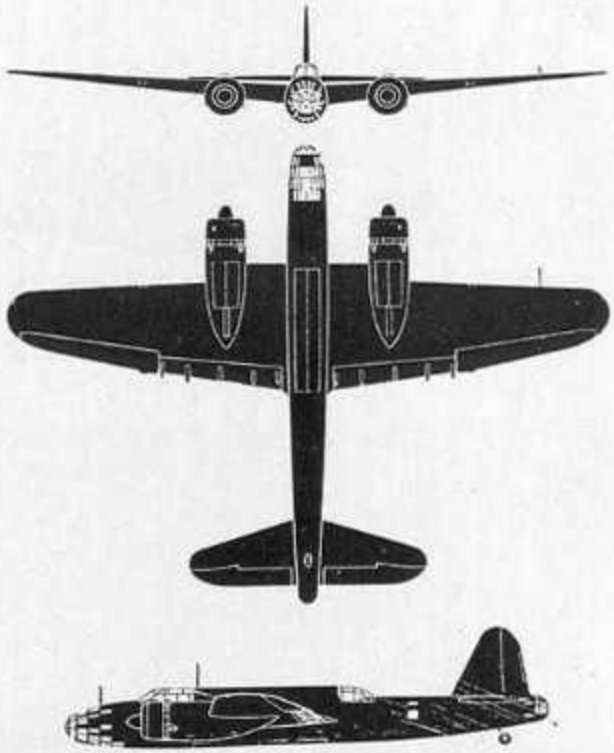


MEDIUM BOMBER

JAPAN

HELEN





ARMY
NAKAJIMA
JAPAN

DISTINGUISHING FEATURES: Twin radial engine mid-wing monoplane with single fin and rudder. Fuselage has gradual taper from round glass-enclosed nose to tail. Long canopy cockpit with solid center section. Wing appearance unique; leading edge is straight between fuselage and engine nacelles and is set forward. Outboard of nacelles, there is slight sweep back of wing to a round tip. Trailing edge tapers and has Fowler flaps. Fin and rudder set high and forward on fuselage. Stabilizer set low. Engines underslung.

INTEREST: Best Jap bomber and now considered the workhorse of Jap Army Airforce. Is replacing Sally III. Operates in all theaters. Extremely well designed.

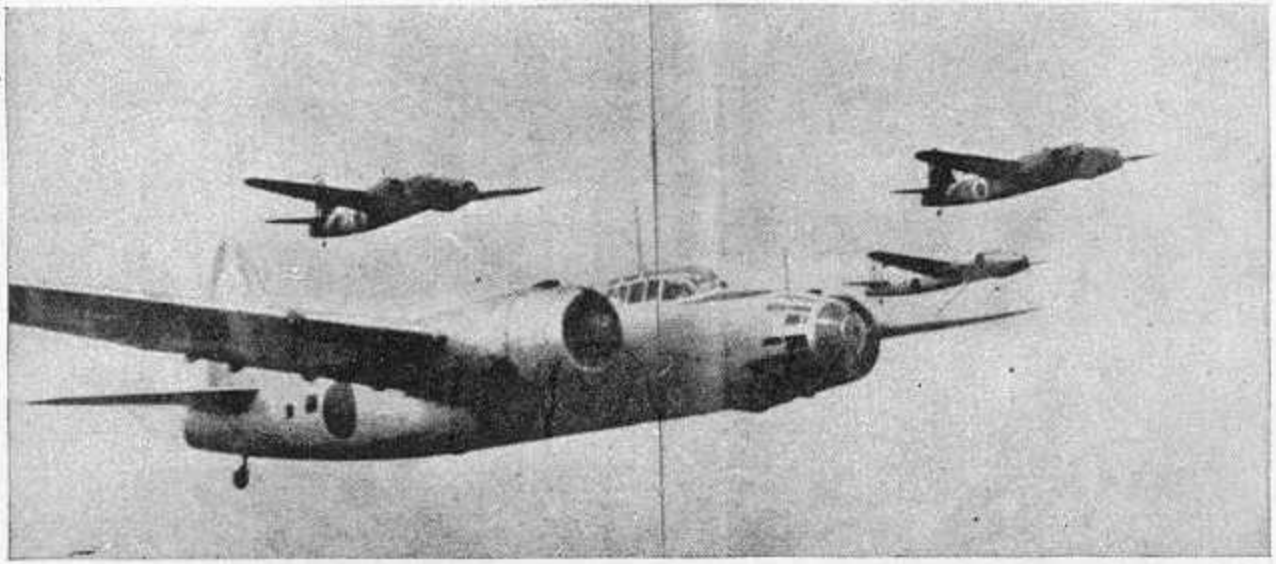
SPAN: 68 ft. 0 in.
LENGTH: 54 ft. 0 in.
MAX. SPEED: 299 m.p.h. at 19,700 ft.
SERVICE CEILING: 29,200 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

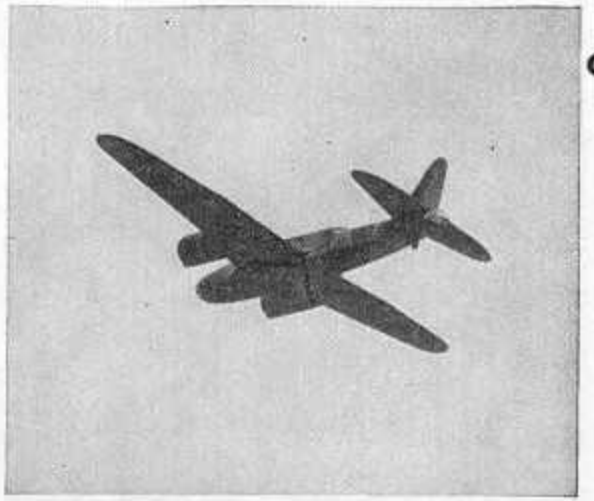
SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A

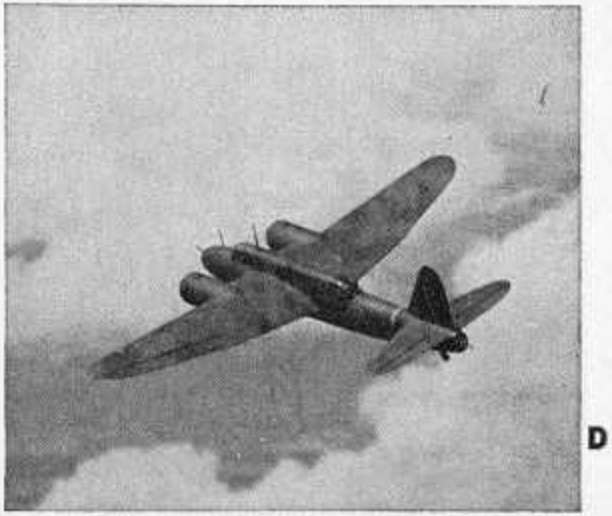


C



B

D

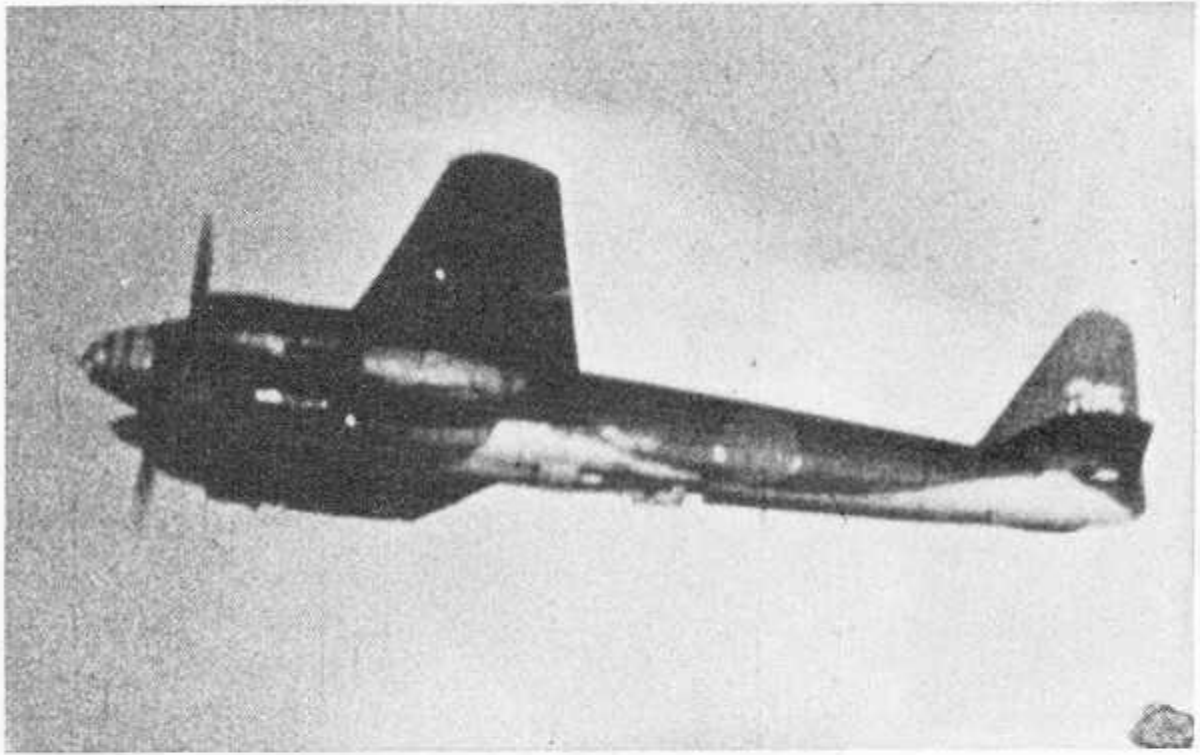


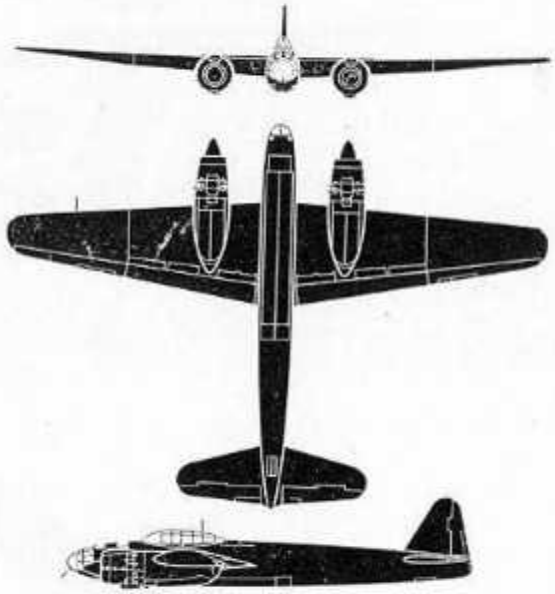
NAVY
MITSUBISHI
JAPAN

MEDIUM BOMBER

JAPAN

FRANCES





SPAN: 65 ft. 7 in. **SERVICE CEILING:** 35,900 ft.
LENGTH: 49 ft. 3 in.
APPROX. MAX. SPEED: 355 mph at 20,600 ft.

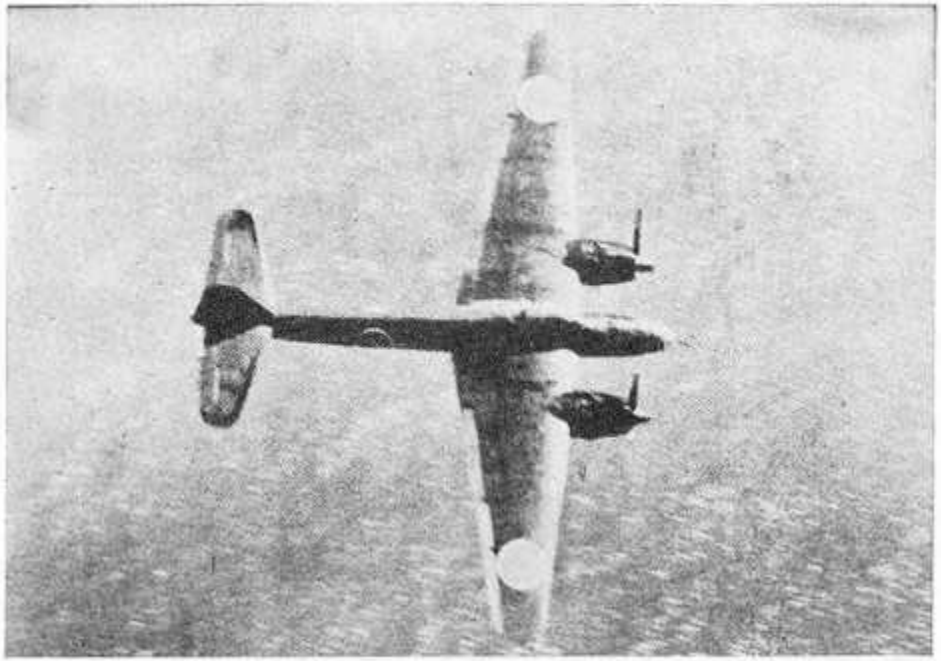
DISTINGUISHING FEATURES: Twin-engine, midwing monoplane. Nearly equitapered wing has bluntly rounded tips and appears to set well forward on fuselage. Fuselage is long and slender. Small, rounded nose projects only slightly beyond engines. Relatively small, raised cockpit canopy set over wing. Unfaired, sharply tapered fin and rudder.

INTEREST: Frances is a land-based, multipurpose Navy bomber and is designated "Ginka" or "Milky Way" by the Japanese. It went into service early in 1944 and saw its first combat against U. S. forces during the invasion of the Marianas. Frances has been modified for use as night fighter known as "Hakko" or "Kyokko" (Corona or Aurora) by the Japs.

APRIL 1945
FROM DATA CURRENTLY AVAILABLE

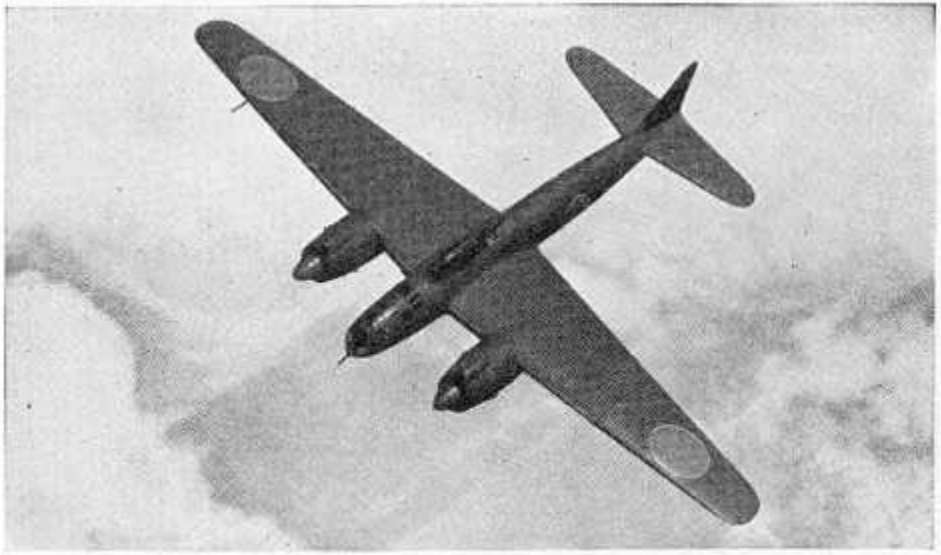
SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED



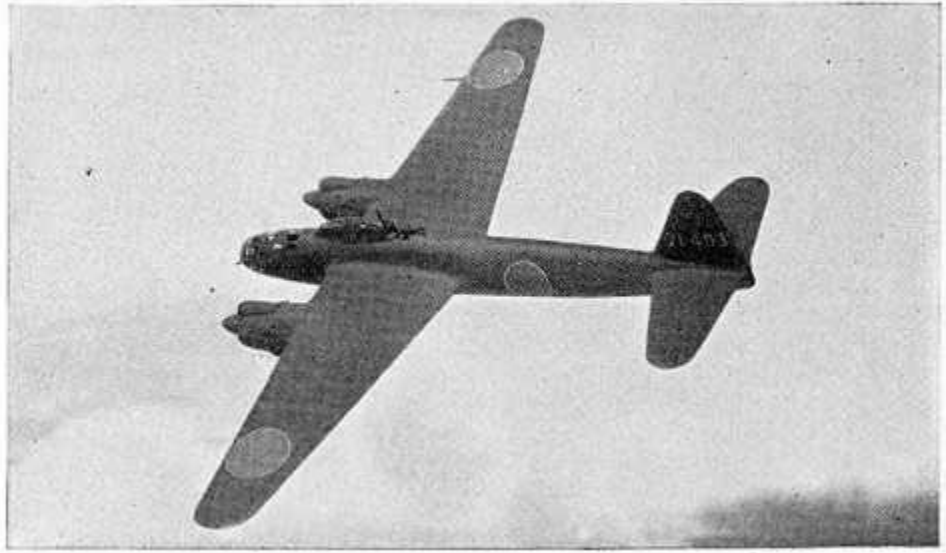
A ▲

B ▼



C ▲

D ▼

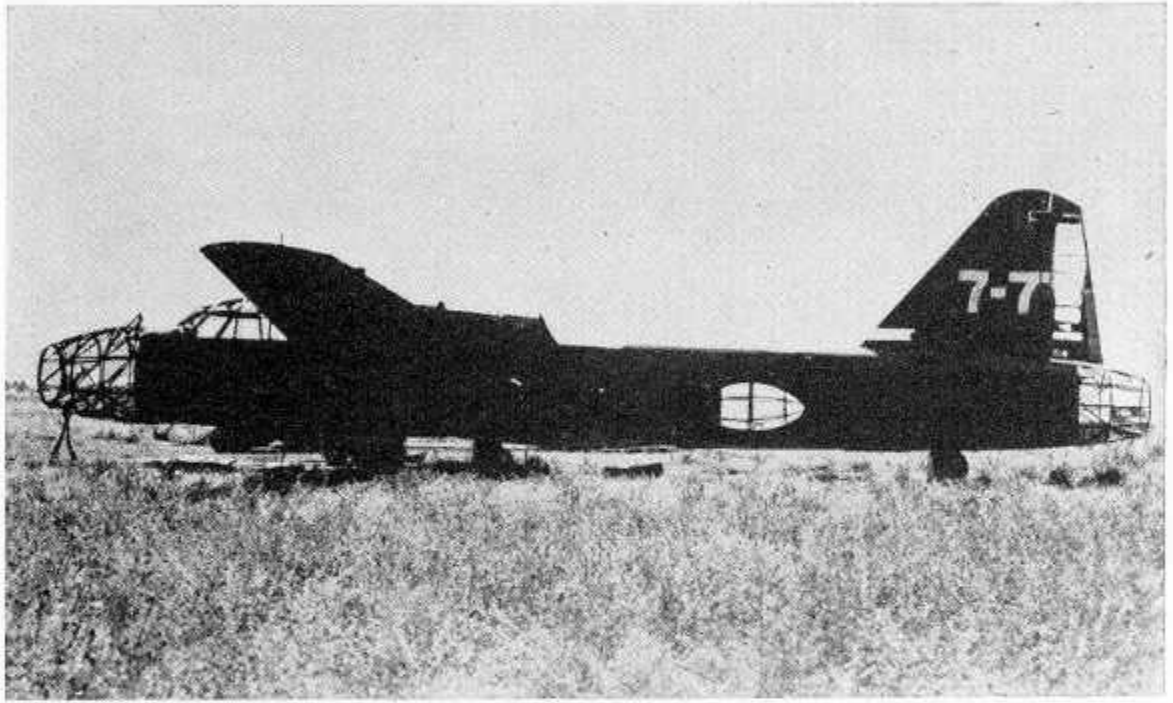


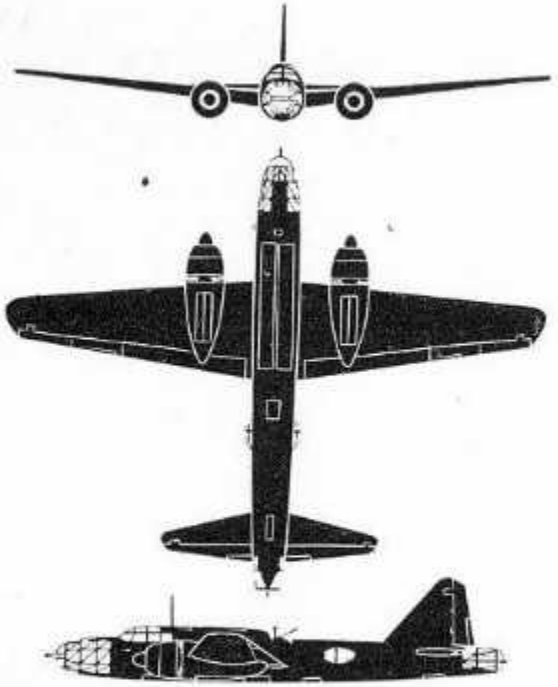
ARMY
MITSUBISHI
JAPAN

MEDIUM BOMBER

JAPAN

PEGGY





SPAN: 73 ft. 9½ in. **SERVICE CEILING:** 30,250 ft.
LENGTH: 61 ft. 3½ in.
APPROX. MAX. SPEED: 339 mph at 20,000 ft.

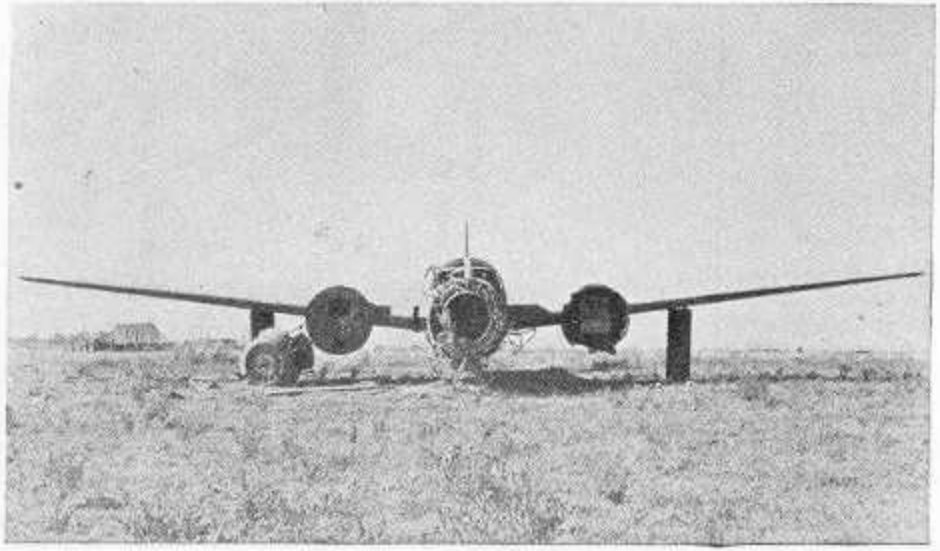
DISTINGUISHING FEATURES: Twin-engine, low mid-wing monoplane with single fin and rudder. Long circular fuselage, broken on top by raised cabin ending at trailing edge of wing. Fuselage is heavy aft and projects well behind tailplane. Nose is long and slender. Wing tapers to raked tips. Fin and rudder is similar to Betty's, with pronounced taper on leading edge and blunt raking tip. Tailplane tapers sharply to rounded tips. Engine nacelles appear short in contrast to long nose.

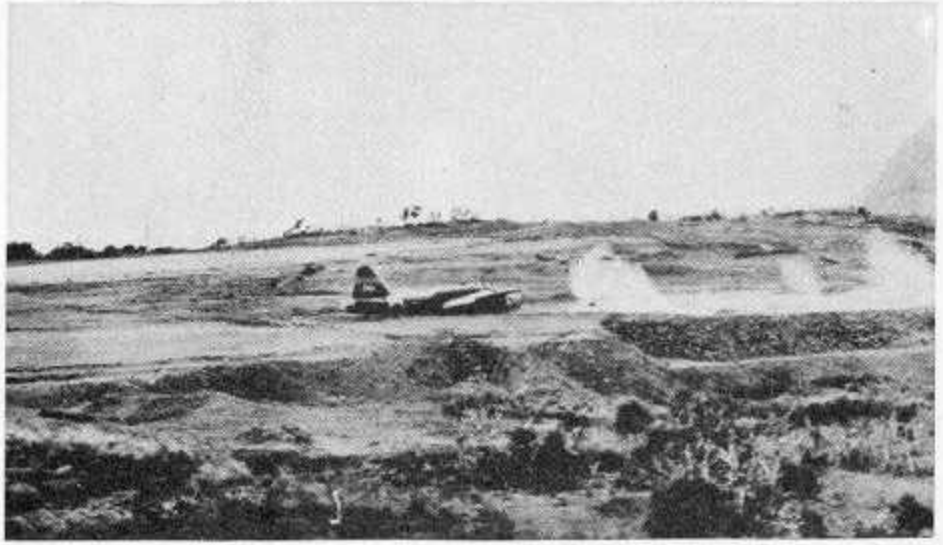
INTEREST: Peggy is a new Japanese Army bomber. First encountered over China, Peggy was more recently met in raids on Saipan and in the Philippines. In addition to the conventional bomber version, a radar equipped model has been met with inclosed nose and tail cone. This version is believed intended as a suicide bomber and has no armament except the turret gun which may be retained. Peggy's with the glass-inclosed nose will be the most frequently encountered version.

APRIL 1945
FROM DATA CURRENTLY AVAILABLE

A ▲ B ▼

C ▲ D ▼



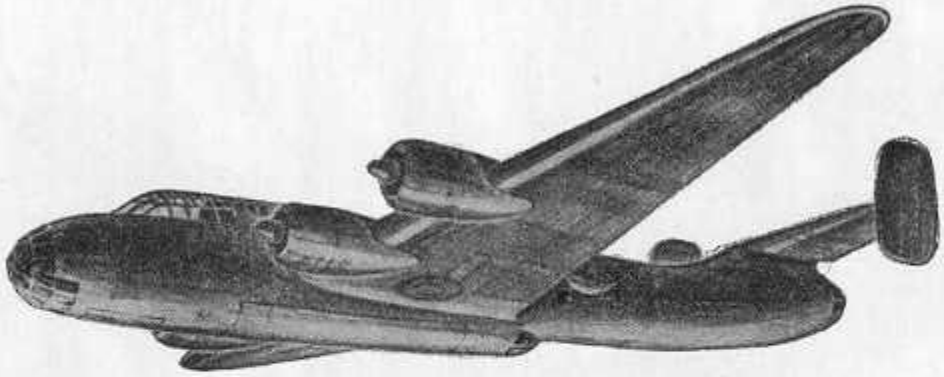


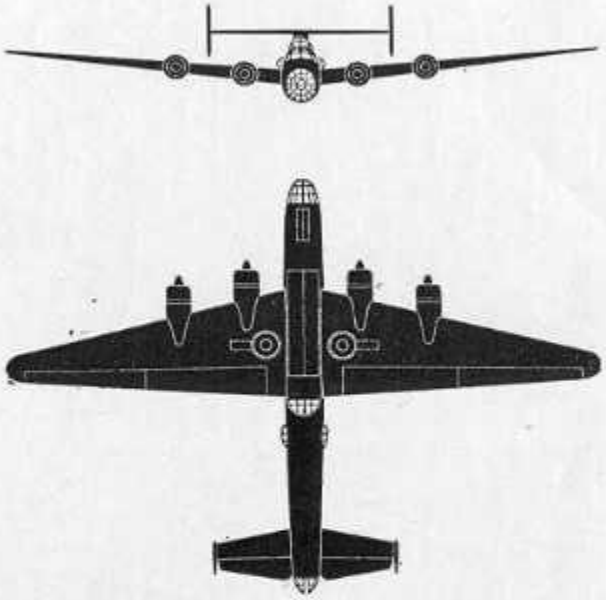
U. S. GOVERNMENT PRINTING OFFICE: 1945

HEAVY BOMBER

JAPAN

LIZ





NAVY
MITSUBISHI
JAPAN

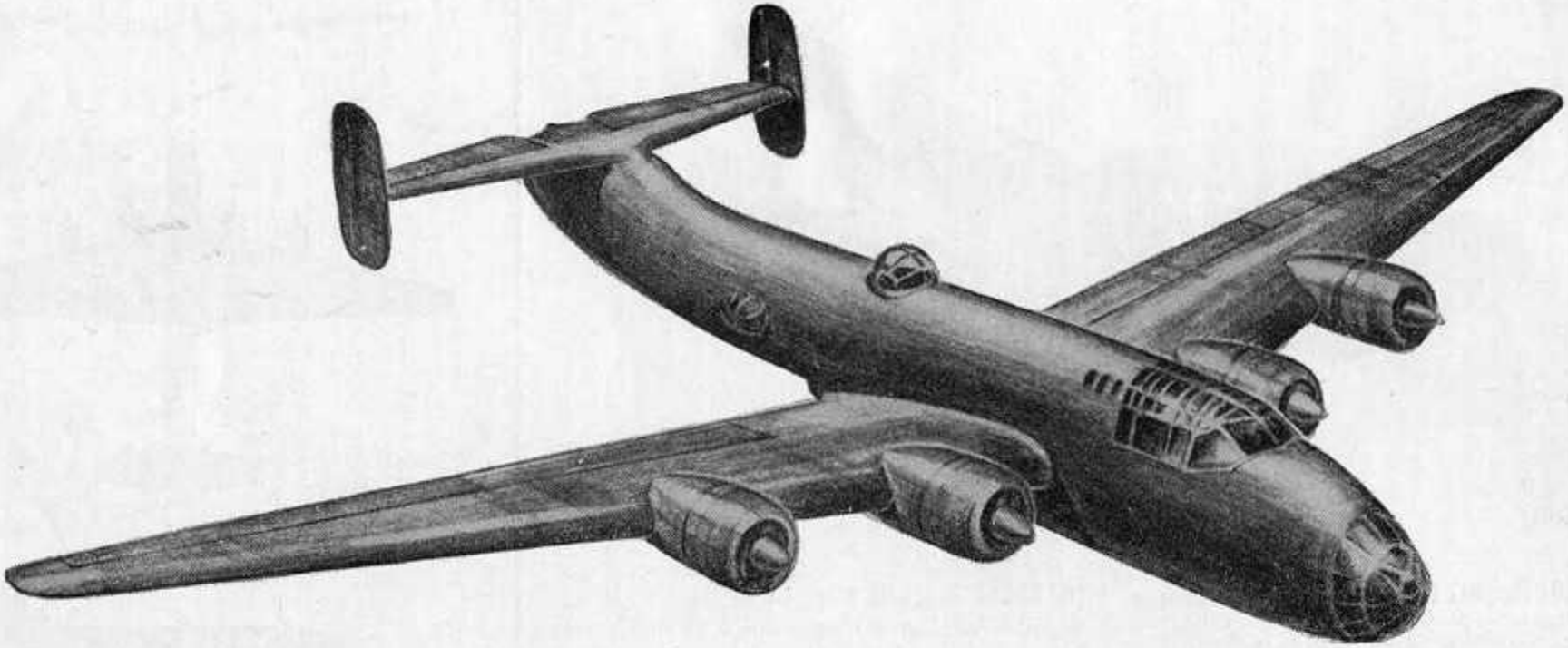
DISTINGUISHING FEATURES: Four engine mid-wing monoplane with twin fin and rudder. Top of fuselage almost horizontal with pronounced break upward just forward of tail-plane. Stinger. Bottom of fuselage parallels topside until mid-section, where it breaks off to form a tunnel gun position. Tail plane set high with vertical surfaces rectangular, similar to B-25. Decided taper to leading edge of wing, and nearly straight trailing edge. Wing shape somewhat similar to C-47. Side blisters.

INTEREST: Liz is Navy patrol bomber. It is described as slightly longer than B-24 and capable of carrying heavier bomb load. Very few sightings so far.

SPAN: Approx. 110 ft. **SERVICE CEILING:**
LENGTH:
MAX. SPEED:

RESTRICTED

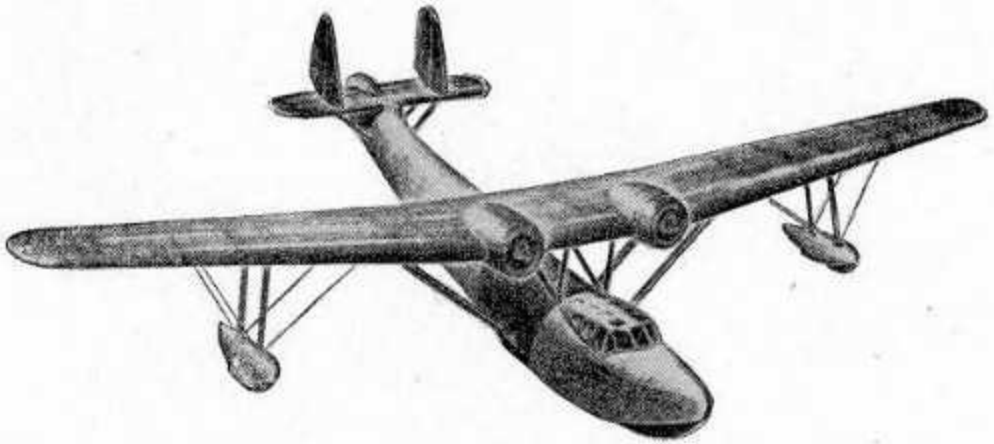
A

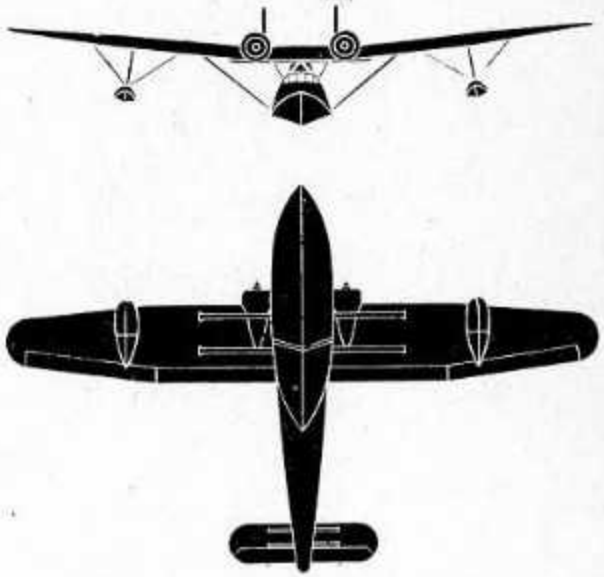


FLYING BOAT

JAPAN

CHERRY





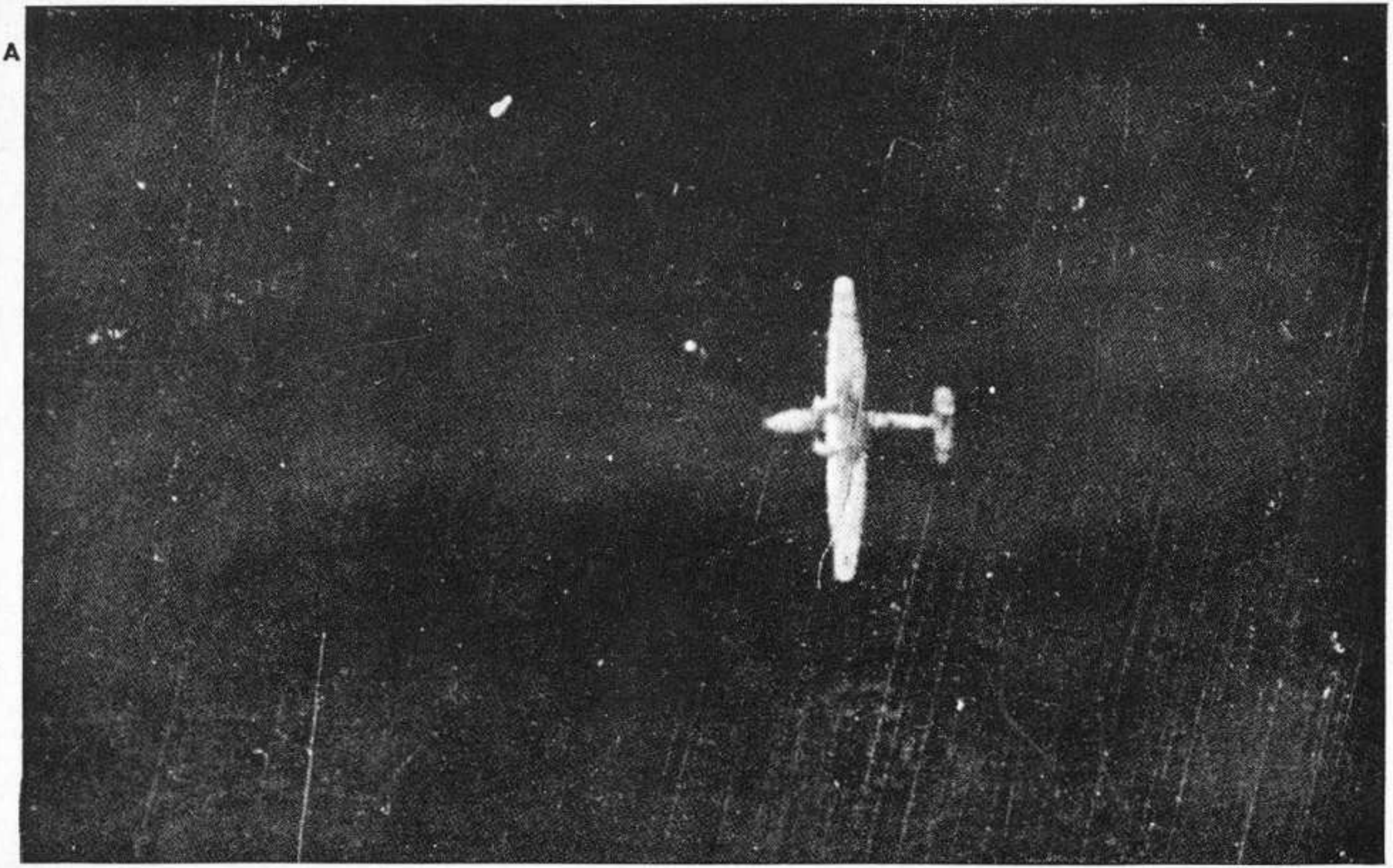
NAVY
KAWANISHI
JAPAN

DISTINGUISHING FEATURES: Twin - engine parasol-wing monoplane with twin fin and rudder. Hull is thin and bowed throughout from sharp nose to high sloping tail. Cockpit sets well forward. Fin and rudder are curved and swept up. Wings are straight inboard and taper outboard. Wing tips are curved. Leading and trailing edge of stabilizer straight, tips round. Engine nacelles are set close to hull. Nacelles are set above high wing and fin and rudder are set inboard of engines.

INTEREST: Patrol bomber: Type 99. Only one photograph captured of Cherry. Little known of its operational value.

SPAN: 77 ft. 0 in.
LENGTH: 54 ft. 4 in.
MAX. SPEED:

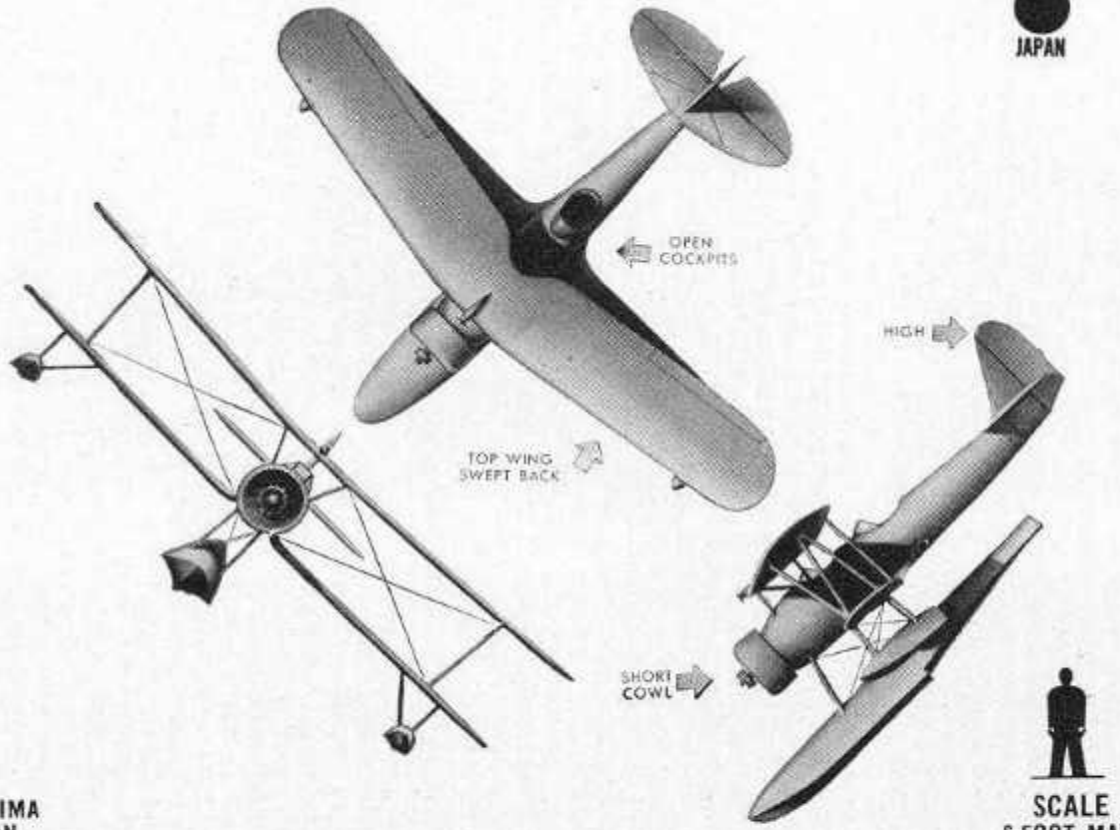
SERVICE CEILING:


A

RECONNAISSANCE

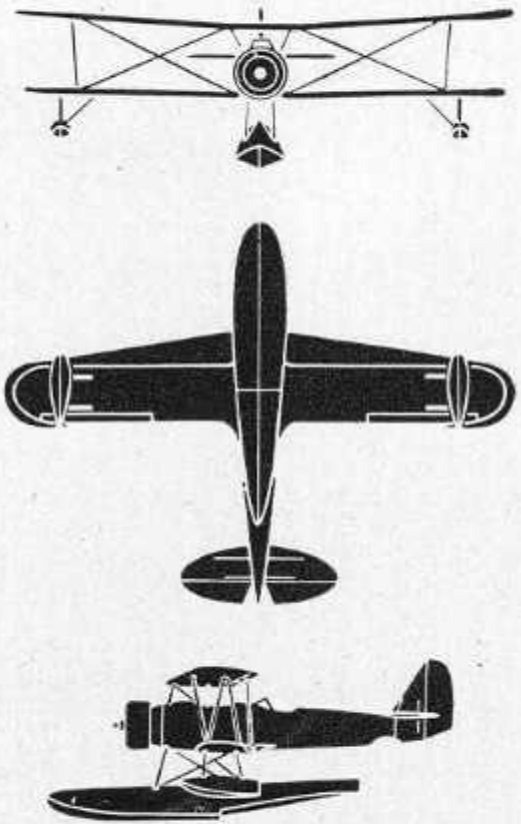
JAPAN

"DAVE" TYPE 95 O-F/P



NAKAJIMA
JAPAN

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Single radial engine biplane equipped with single pontoon and fixed wing tip floats. Upper wing swept back, lower wing square to fuselage. Rounded tips. Wings have N-shaped struts. Engine has prominent ring cowling. Fuselage tapers smoothly with two open cockpits. Oval fin and rudder. Elliptical stabilizer and elevator with V cut-out on trailing edge.

INTEREST: Australian reports have indicated that steep dive bombing has been done by this Nakajima product, now manufactured by both Nakajima and Mitsubishi. It carries a crew of two, a bomb load up to 500 lbs., and has two 7.7 mm. machine guns. The forward gun is fixed and the rear gun, firing from the rear cockpit, is flexible. It carries no armor and the fuel tanks lack the self-sealing feature.

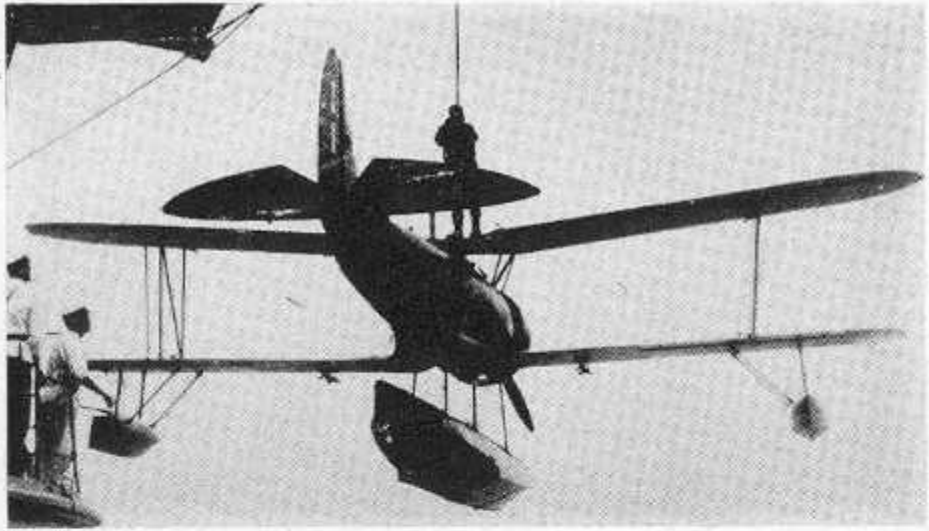
SPAN: 36 ft.
LENGTH: 28 ft. 4 in.
APPROX. SPEED: 155 m. p. h. at 12,000 ft.
SERVICE CEILING. 23,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

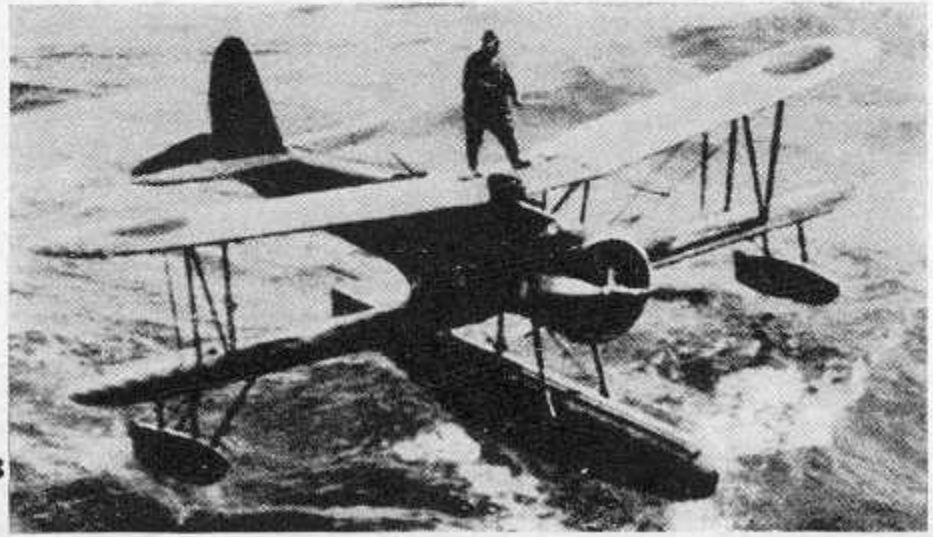
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

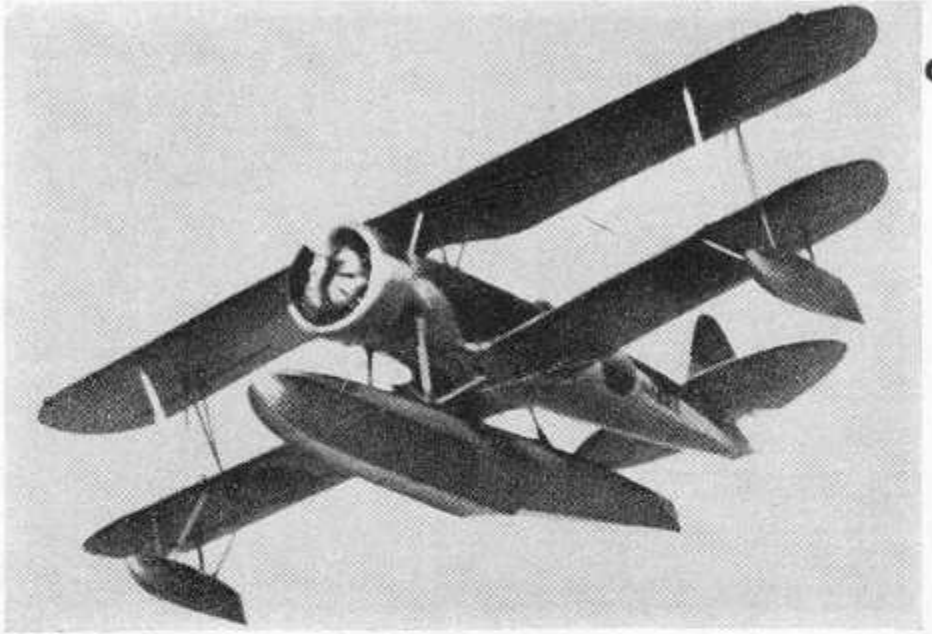
A



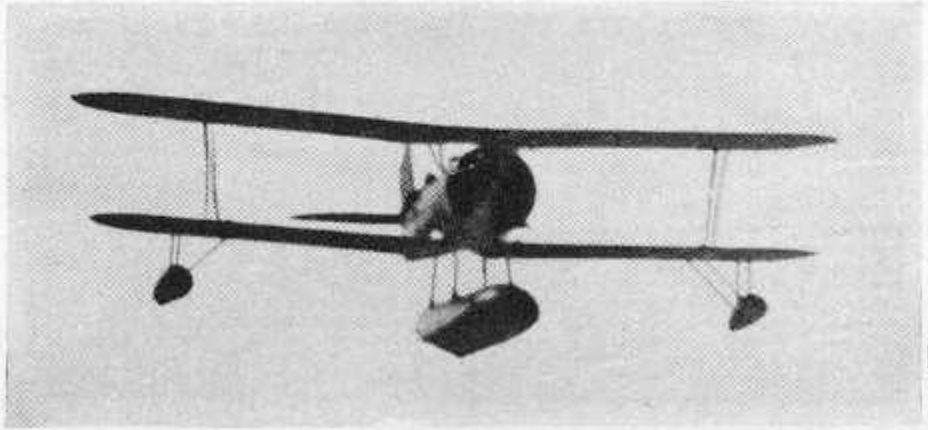
B



C



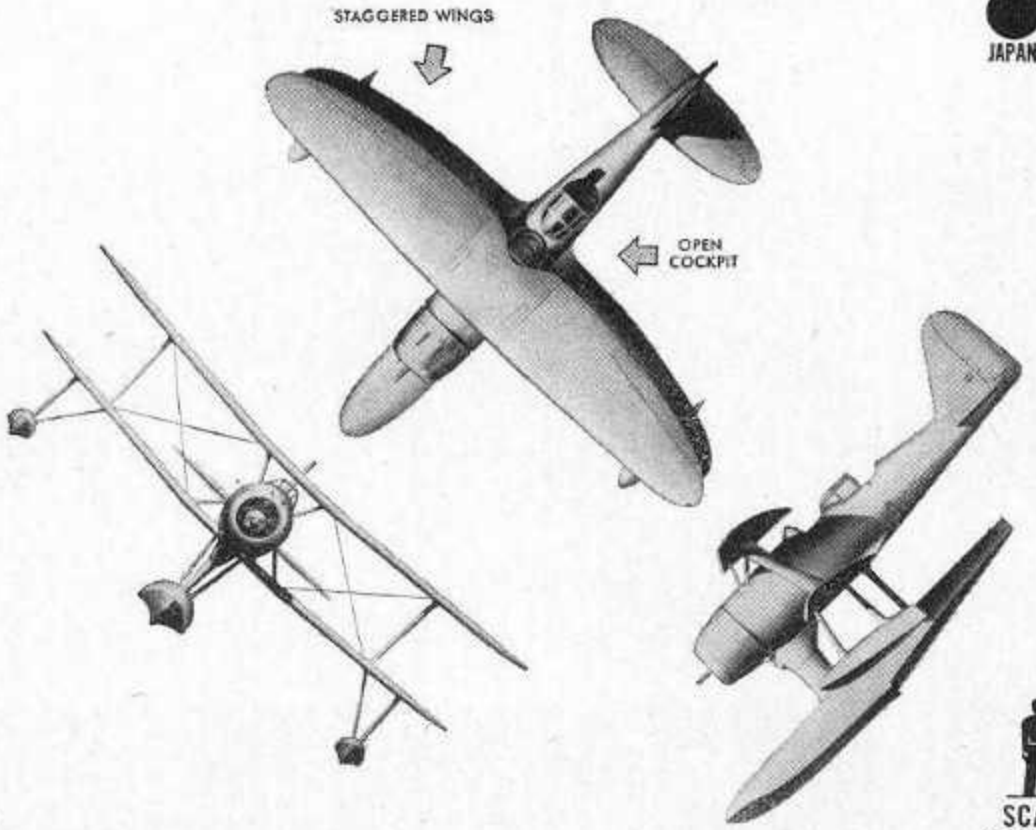
D



RECONNAISSANCE

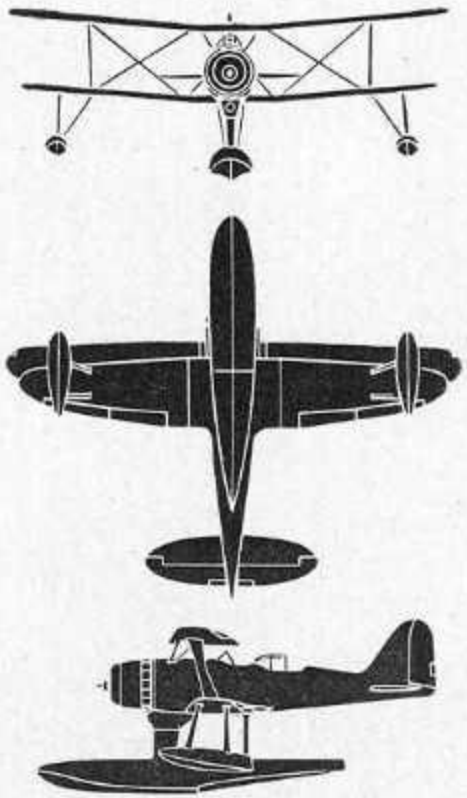
JAPAN

"PETE" TYPE 0 O-F/P



SASEBO
JAPAN

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Radial engine biplane equipped with large central pontoon and fixed wing floats. Wings have tapered leading edges, giving a swept back appearance, and large round tips. Fuselage has normal cowling for a radial engine, well streamlined. Tapering fin. Trailing edge of rudder nearly vertical.

INTEREST: This two-place float plane of the Japanese Navy is a product of the Sasebo naval arsenal. It may carry a bomb load up to 500 lbs. in two small bomb racks located under the lower wings. For armament, it mounts two 7.7 mm. fixed machine guns, which fire through the propeller and one 7.7 mm. flexible machine gun, operating from the rear cockpit. Self-sealing gas tanks are not a part of "Pete's" equipment.

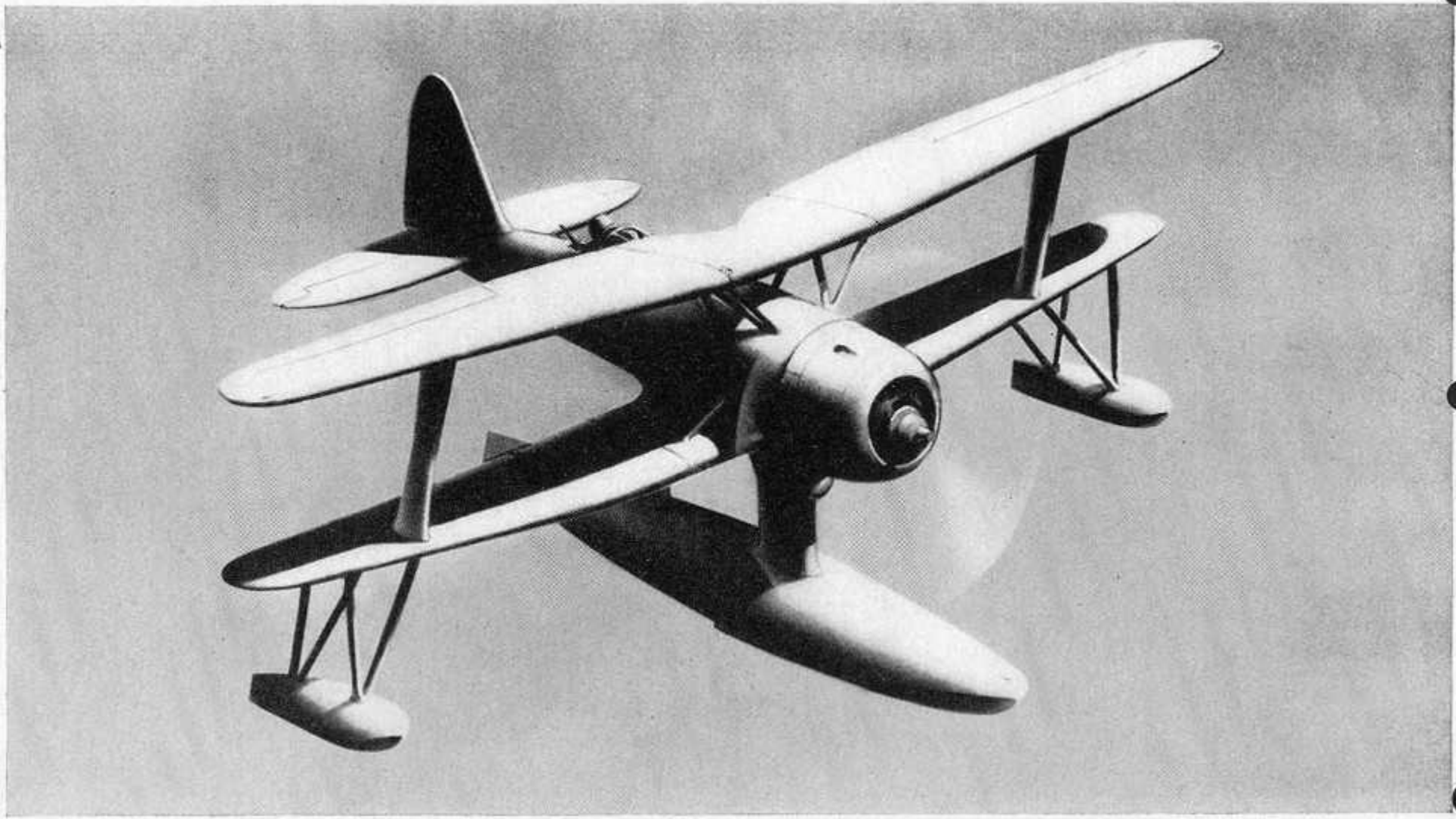
SPAN: 37 ft.
LENGTH: 34 ft. 6 in.
APPROX. SPEED: 198 m. p. h. at 5,000 ft.

SERVICE CEILING:
29,000 ft.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

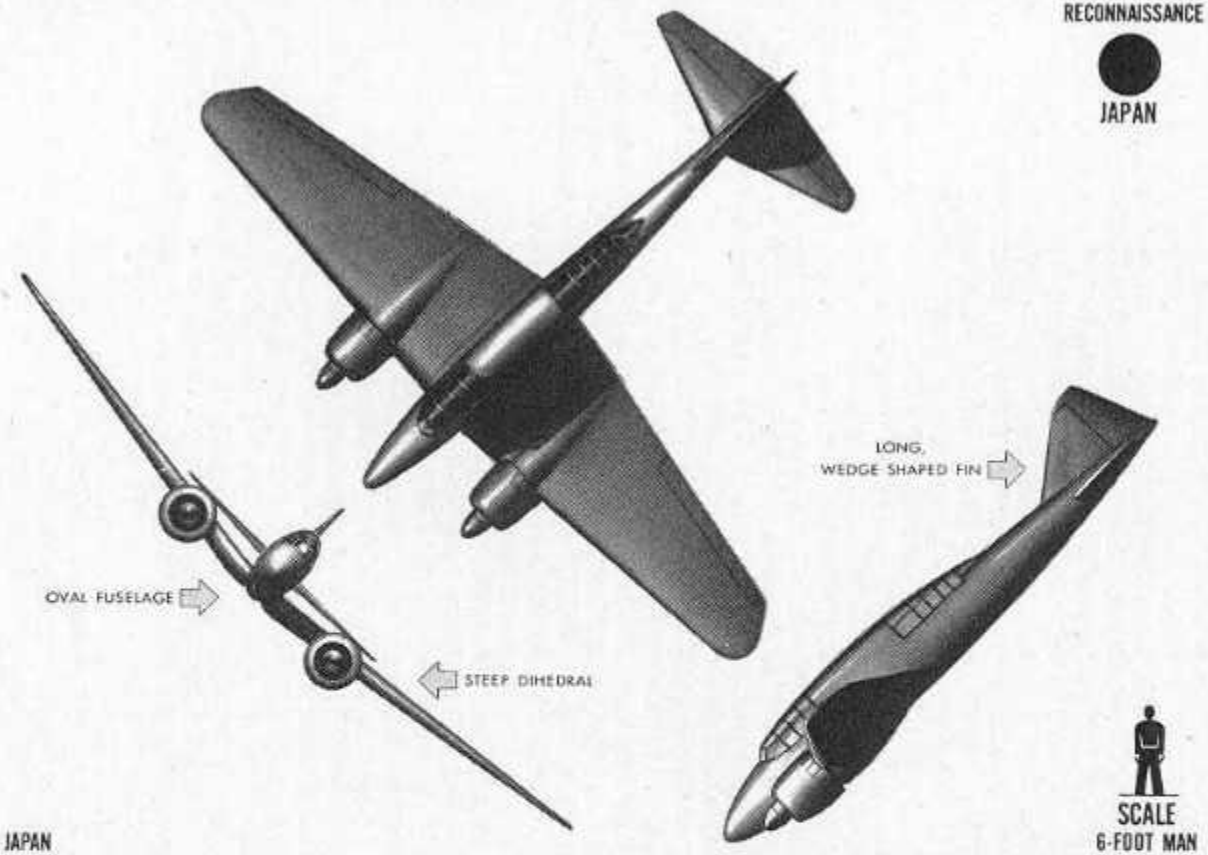
RESTRICTED



RECONNAISSANCE

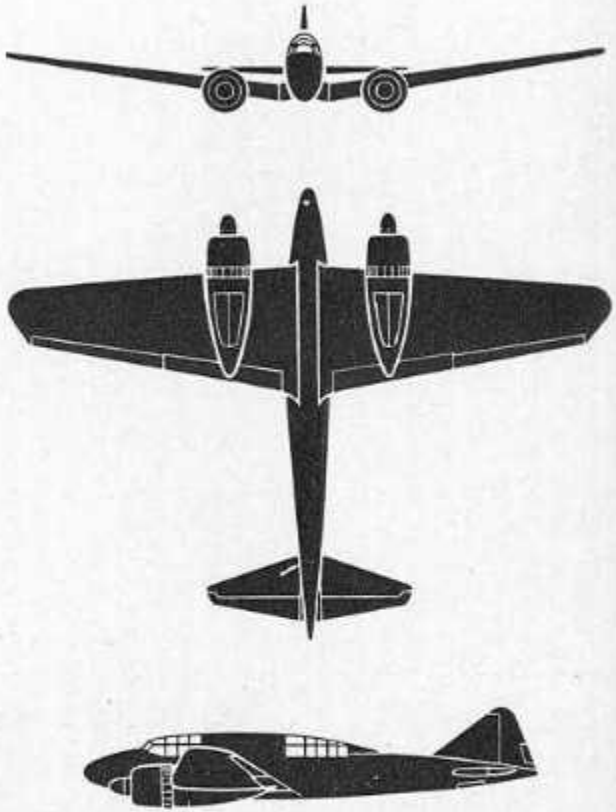
JAPAN

DINAH



JAPAN

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Twin radial engine, low-wing monoplane. Tapered wing with raked tips. Deep, narrow, oval-shaped fuselage with pointed nose extending beyond nacelles. Long, raised canopy with unglazed center section over wing. Triangular-shaped fin and rudder, wide at base. Tailplane has marked taper on both edges, with small raked tips.

INTEREST: This aircraft is used principally for special reconnaissance missions. Its range is estimated at 1,105 miles at normal cruising speed of 251 m. p. h. The power plant consists of two 14-cylinder air-cooled radial engines developing 1,030 hp. at 10,800 feet.

SPAN: 50 ft. (est.)

LENGTH: 38 ft. (est.)

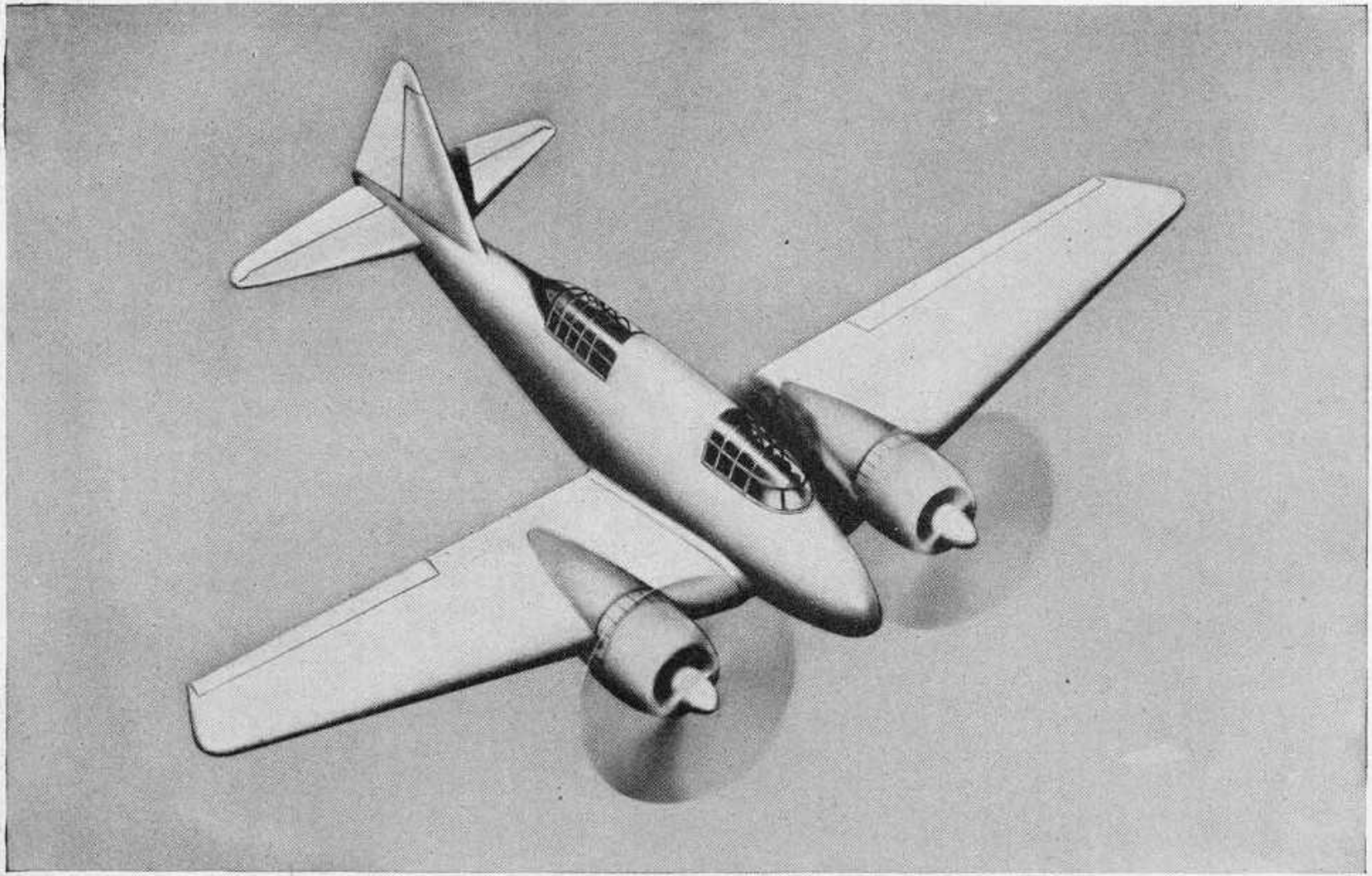
SERVICE CEILING: 34,700 ft.

MAX. SPEED: 343 m. p. h. at 13,000 ft.

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

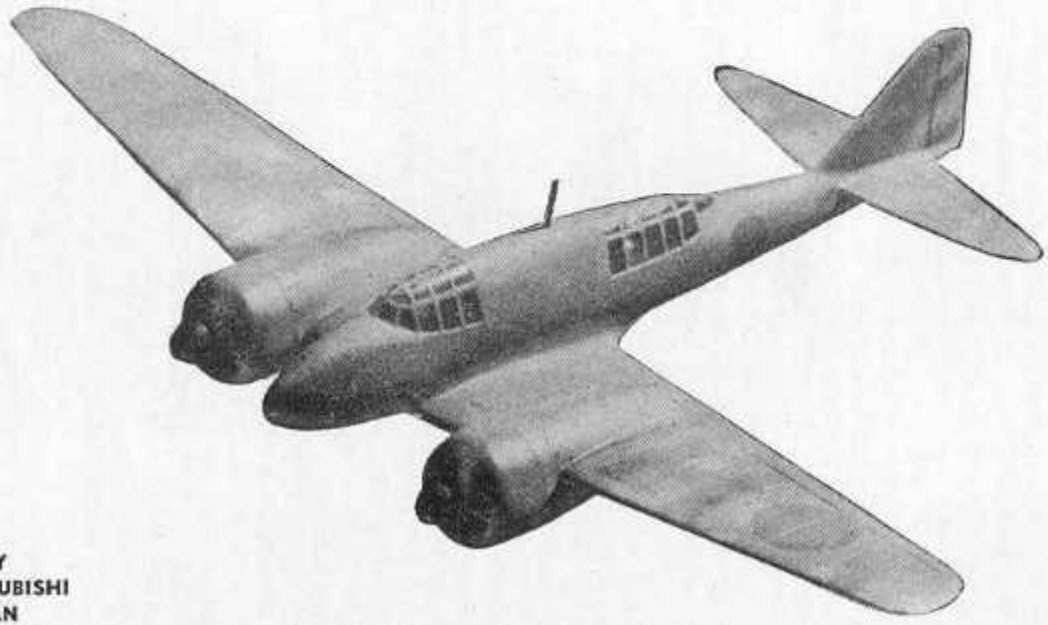
RESTRICTED



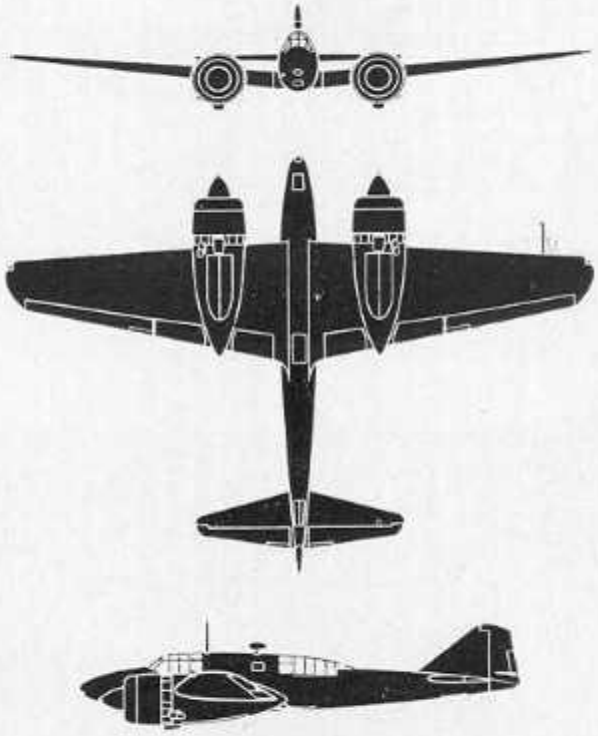
RECONNAISSANCE

JAPAN

DINAH III



ARMY
MITSUBISHI
JAPAN



DISTINGUISHING FEATURES: Twin - engine low-wing monoplane with single fin and rudder. Solid pointed nose with engine extending almost to nose. Cockpit is in two sections and fairs smoothly into fuselage. Wide fin joins fuselage at sharp angle, rudder slopes forward, and top side appears flat, giving Dinah an unusually wide tail shape. Fuselage is thin throughout and extends to point beyond tail plane. Both wing and stabilizer shapes are double-tapered. Wing tips are cut back. Fuselage appears circular, nacelles are large and underslung. Stabilizers set low. Dinah has a hump back appearance.

INTEREST: Jap calls Dinah "Headquarters Reconnaissance plane." It has very clean lines. Used by Army and to limited extent by Navy. Mark 3 has greater power due to larger engines, and it is latest version. Only Mark 1 and Mark 3 exist.

SPAN: 48 ft. 4 in.
LENGTH: 36 ft. 3 in.
MAX. SPEED: 341 m.p.h. at 17,600 ft.
SERVICE CEILING: 36,300 ft.

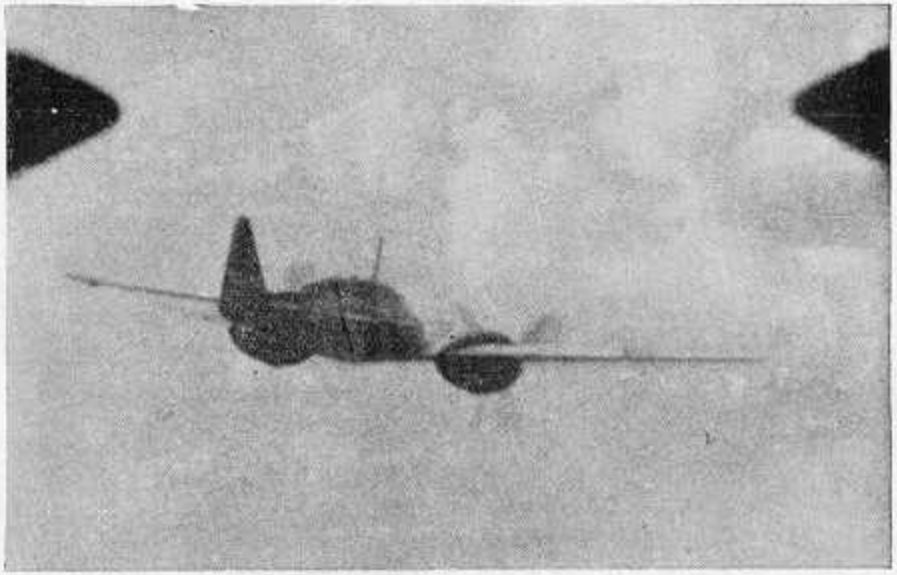
AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

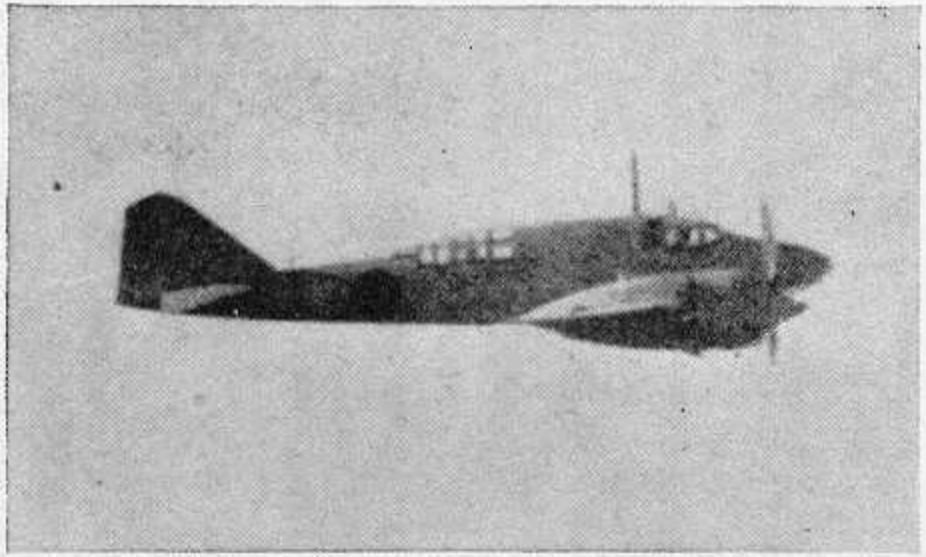
RESTRICTED

A

C



B

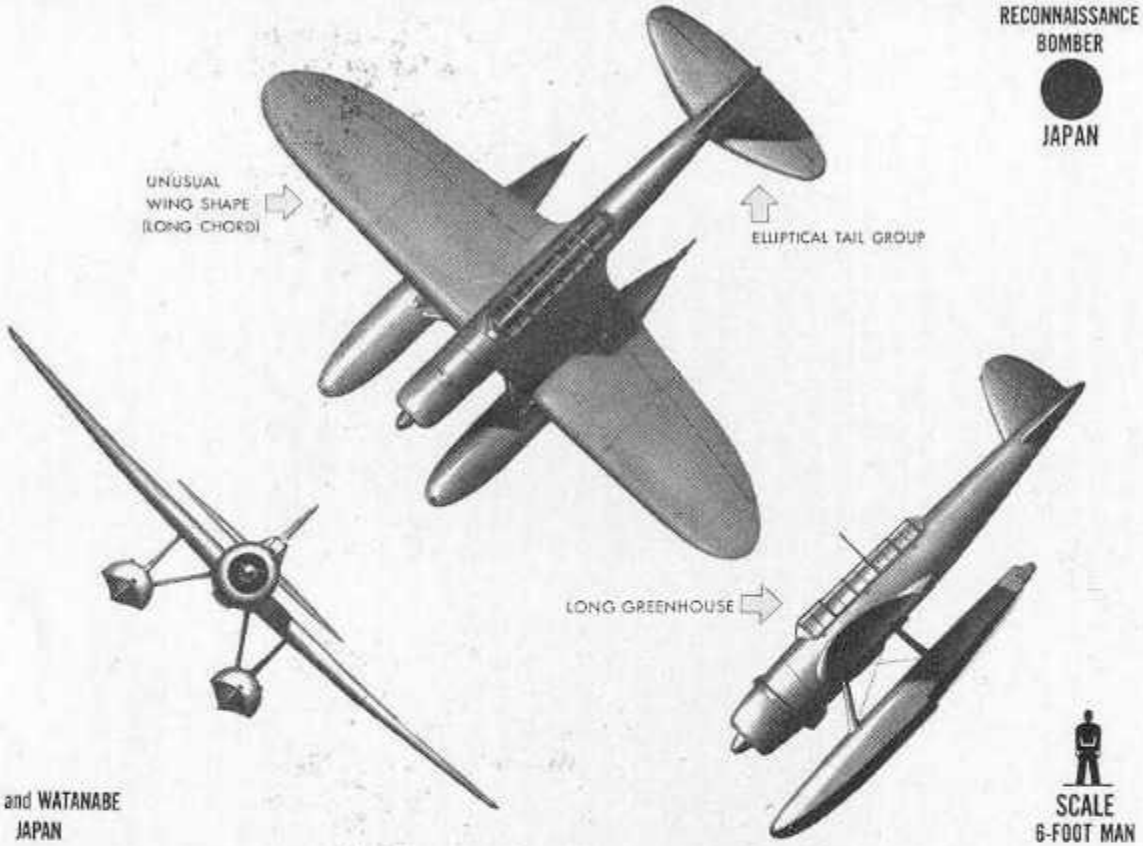


D

JAKE

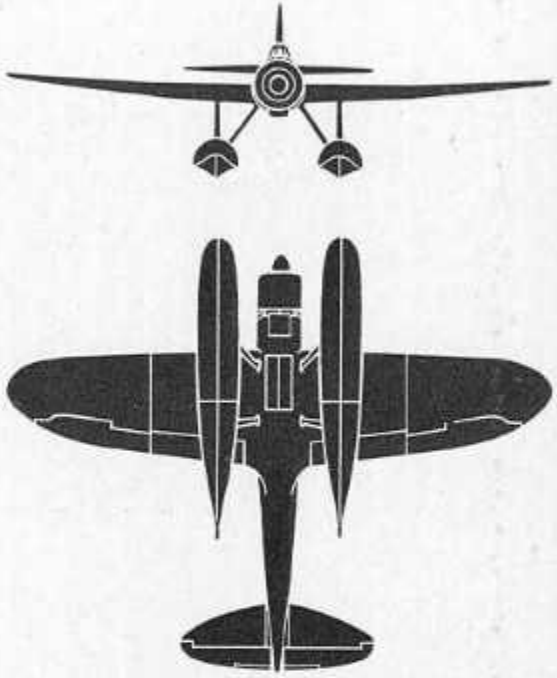
RECONNAISSANCE BOMBER

JAPAN



AICHI and WATANABE
JAPAN

SCALE
6-FOOT MAN



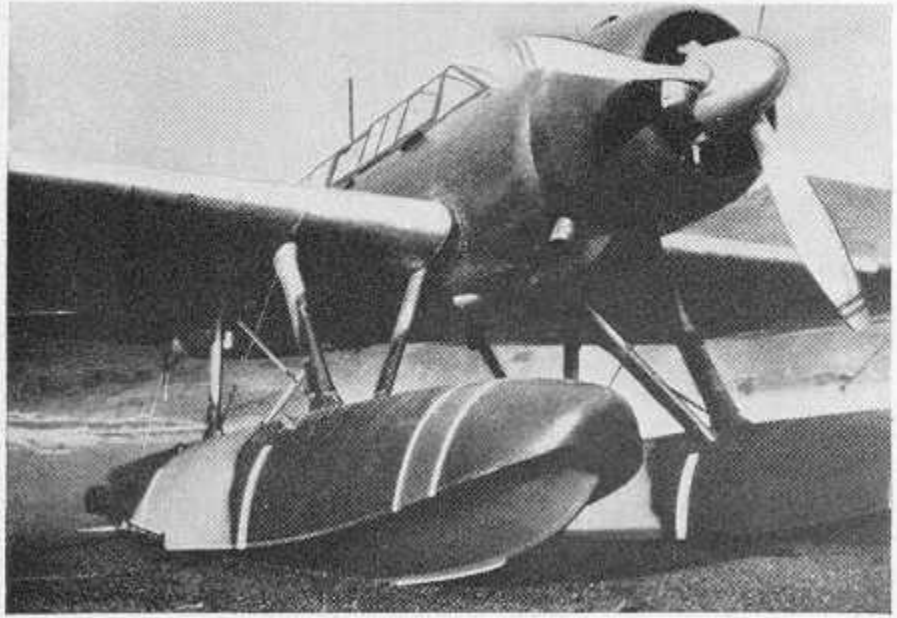
DISTINGUISHING FEATURES: Single radial engine, low-wing monoplane. Stubby wing with tip curves beginning well inboard. Long unfaired greenhouse. Large floats. High semi-elliptical fin and rudder. Tailplane has curved leading and trailing edges.

INTEREST: This plane when first reported was thought to be type 99 dive bomber "Val" equipped with floats. Recent evidence proves this supposition to have been incorrect. The long wing tip curves give the appearance of an elliptical wing. Recent reports state that Allied shipping has been attacked by this floatplane. Its bomb load is reported to be 4 x 60 kg. (132 lb.) bombs. Armament consists of 1 x 7.7-mm. free gun in the dorsal position.

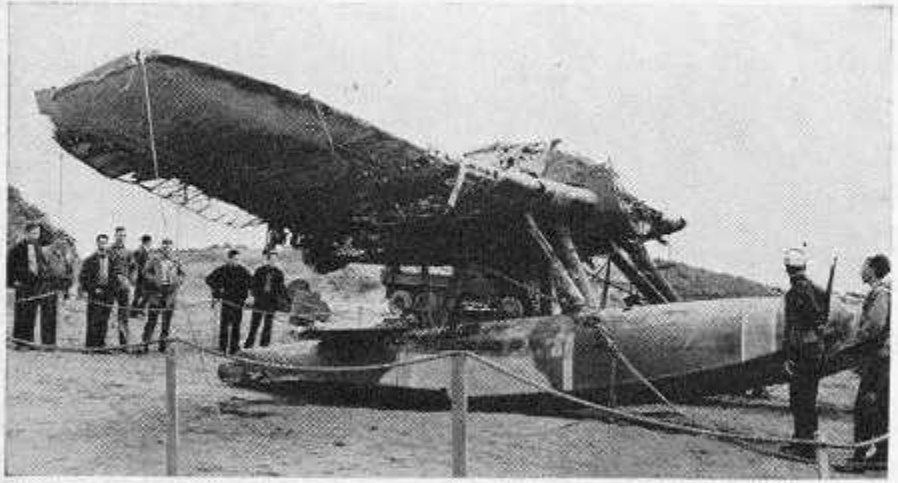
SPAN: 47 ft. 6 in.
LENGTH: 35 ft. 4 in.
MAX. SPEED: 216 m. p. h. at 7,500 ft.
SERVICE CEILING: 24,400 ft.

RESTRICTED

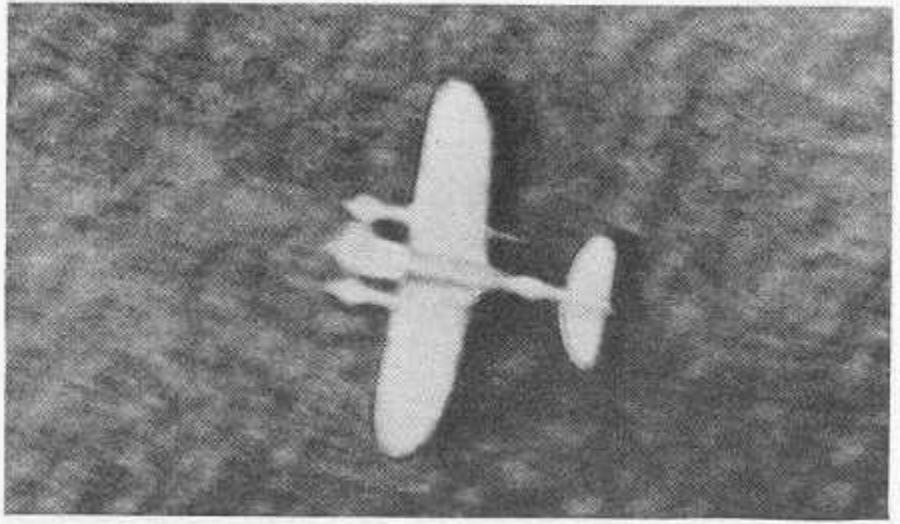
A



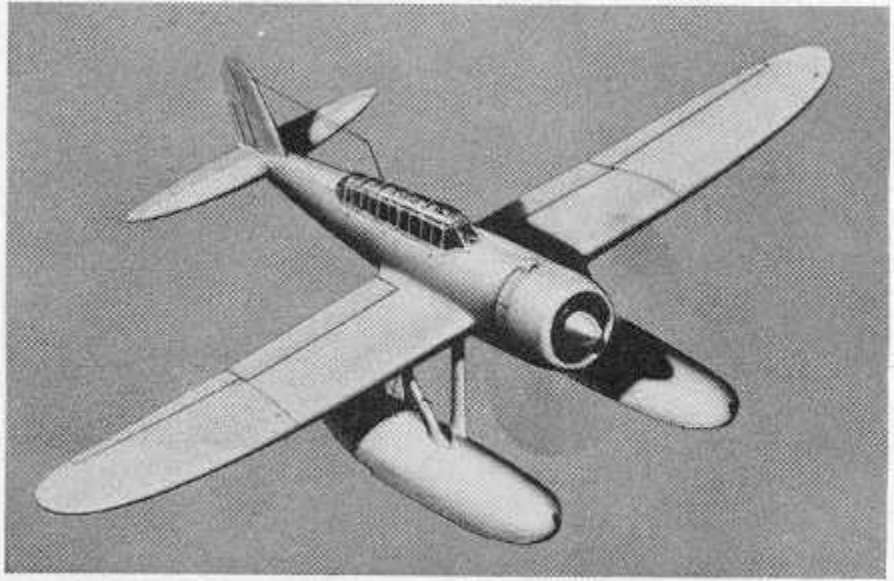
B



C



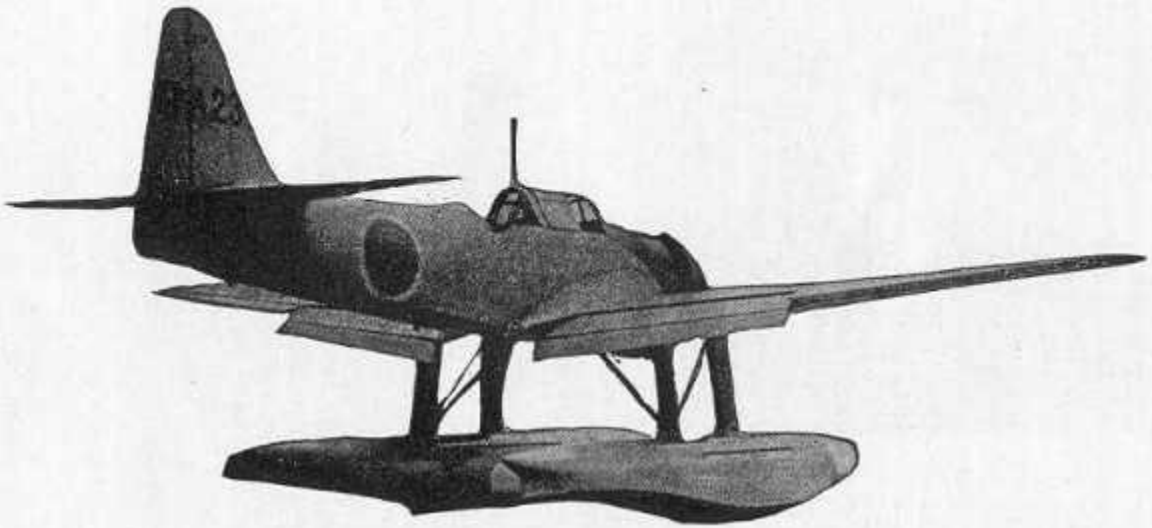
D

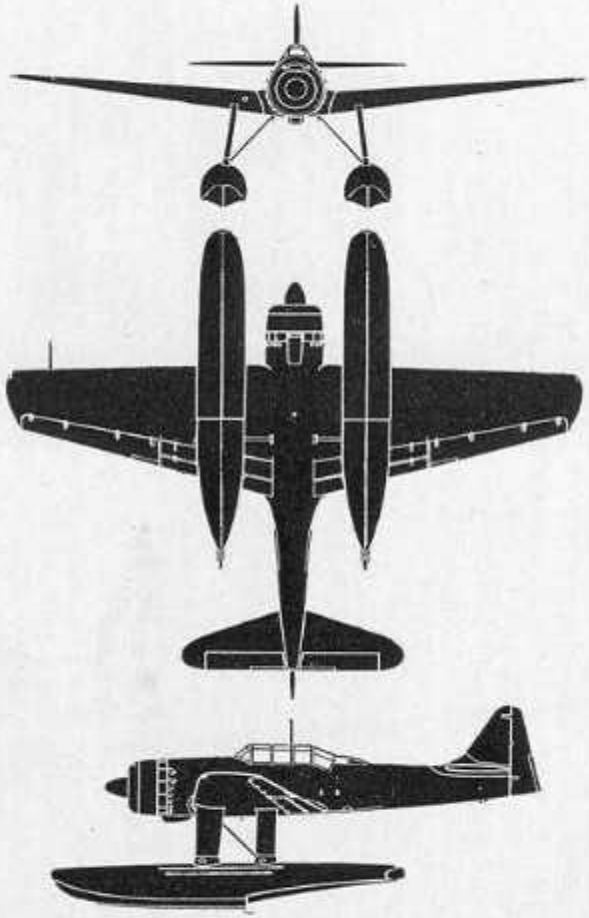


RECONNAISSANCE

JAPAN

14 EXPERIMENTAL





NAVY
AICHI
JAPAN

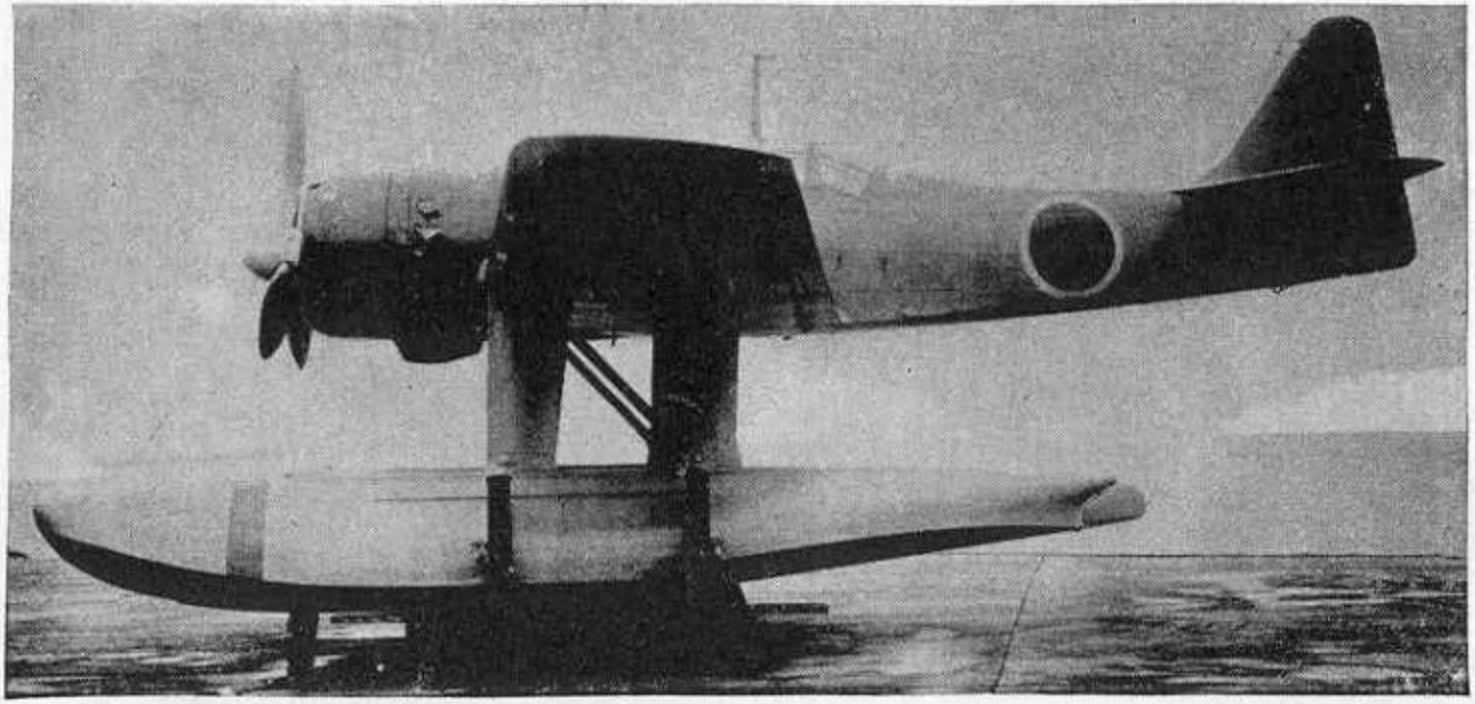
DISTINGUISHING FEATURES: Single engine low-wing monoplane with single fin and rudder. Smooth forward cowling fairs into two-place low-set cockpit. Fin has slightly curved appearance, rudder a pushed-forward effect, giving tail an angular shape. Two strong struts support twin floats which are unusually long. Wing has straight leading edge, but decided taper to trailing edge. Tips are cutback. Stabilizer has reverse shape to wing plane. There is dihedral to wings, which are thick at roots.

INTEREST: This two-place reconnaissance float plane is believed to be successor to Jake. Might also be used as a dive-bomber. From meagre reports, high performance is indicated. Little known about this aircraft.

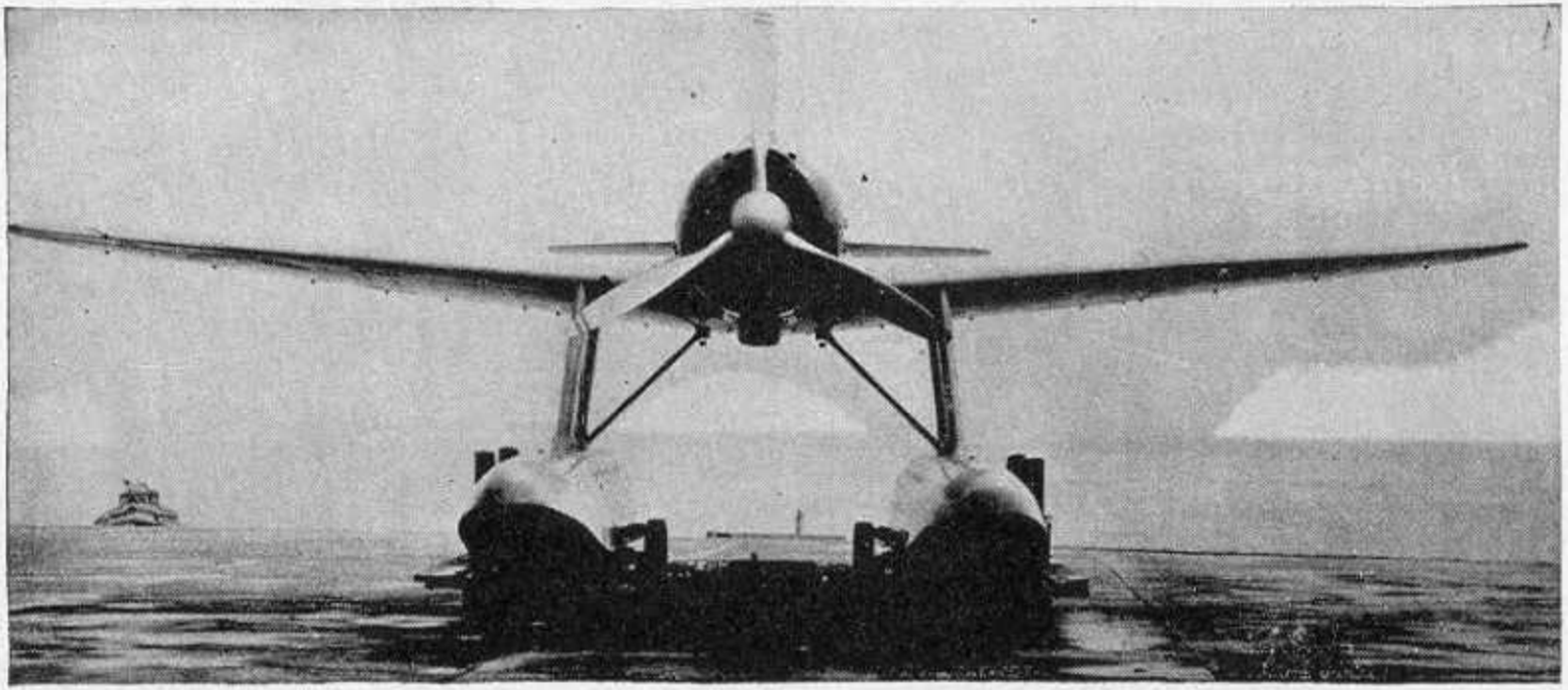
SPAN: 42 ft. 0 in. **SERVICE CEILING:**
LENGTH: 35 ft. 7 in.
MAX. SPEED: Estimated 275 m.p.h. at 19,000 ft.

RESTRICTED

A



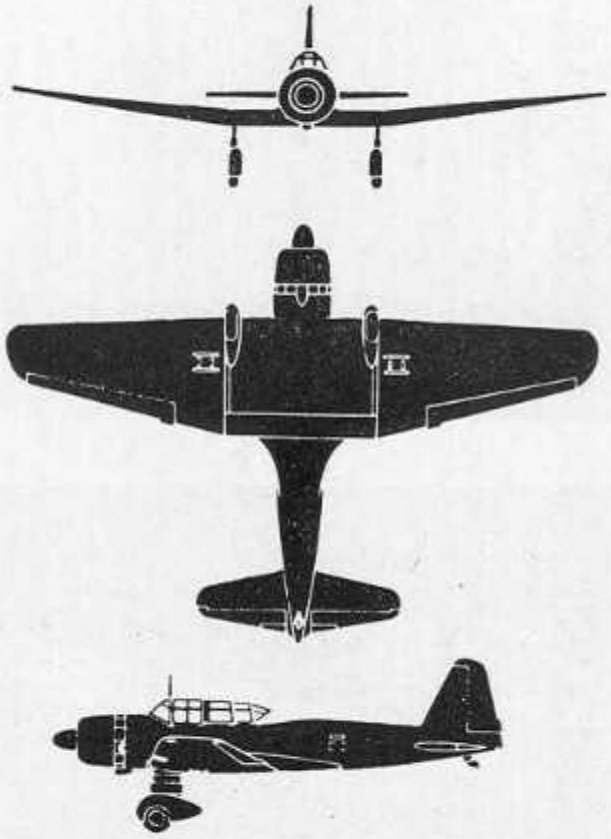
B



RECONNAISSANCE

JAPAN

SONIA



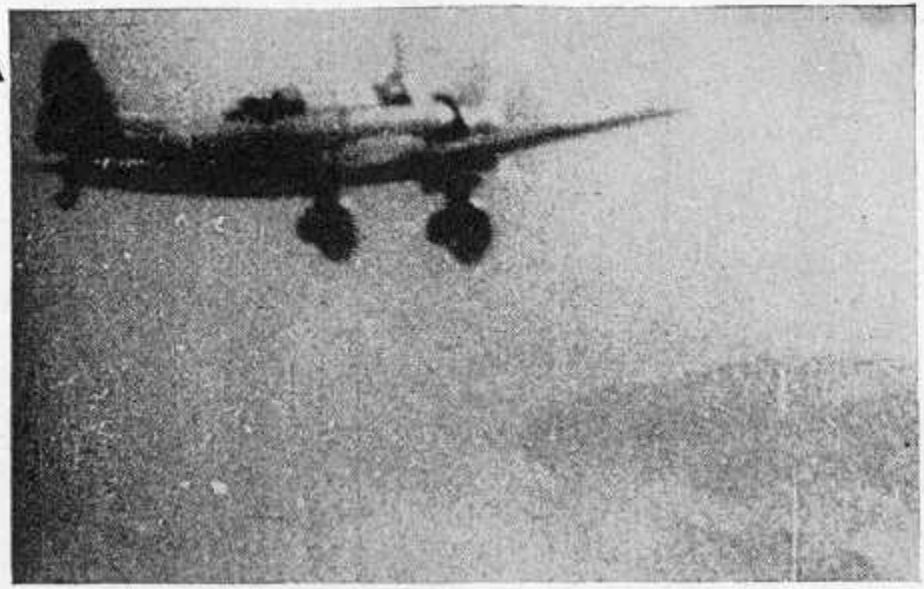
ARMY
MITSUBISHI
JAPAN

DISTINGUISHING FEATURES: Single engine low-wing monoplane with single fin and rudder and fixed undercarriage with spats. Fuselage is long and slim and tapers gradually to a tail cone. Large spinner, cockpit set high. Fin and rudder triangular shaped. Wing shape practically rectangular in appearance. Equal taper to leading and trailing edges of tail plane with round tips. Fuselage circular, inboard section of wing straight, outboard section has moderate dihedral.

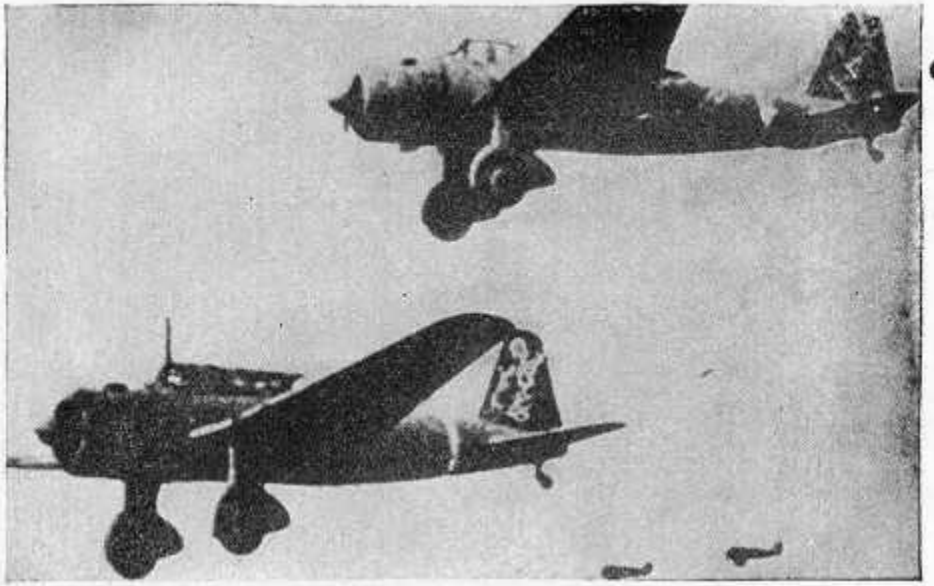
INTEREST: Two versions of this army aircraft. One is a reconnaissance type and the other ground attack, the latter being heavier armed and armorplated. Has not been seen very often in combat areas.

SPAN: 39 ft. 10 in. **SERVICE CEILING:**
LENGTH: 30 ft. 2 in.
MAX. SPEED: Estimated 250 m.p.h.

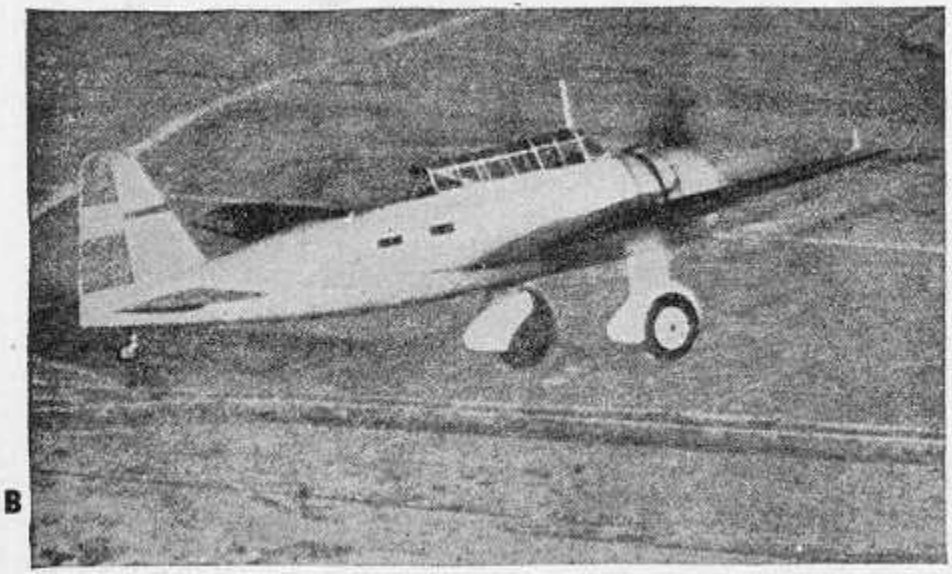
RESTRICTED



A



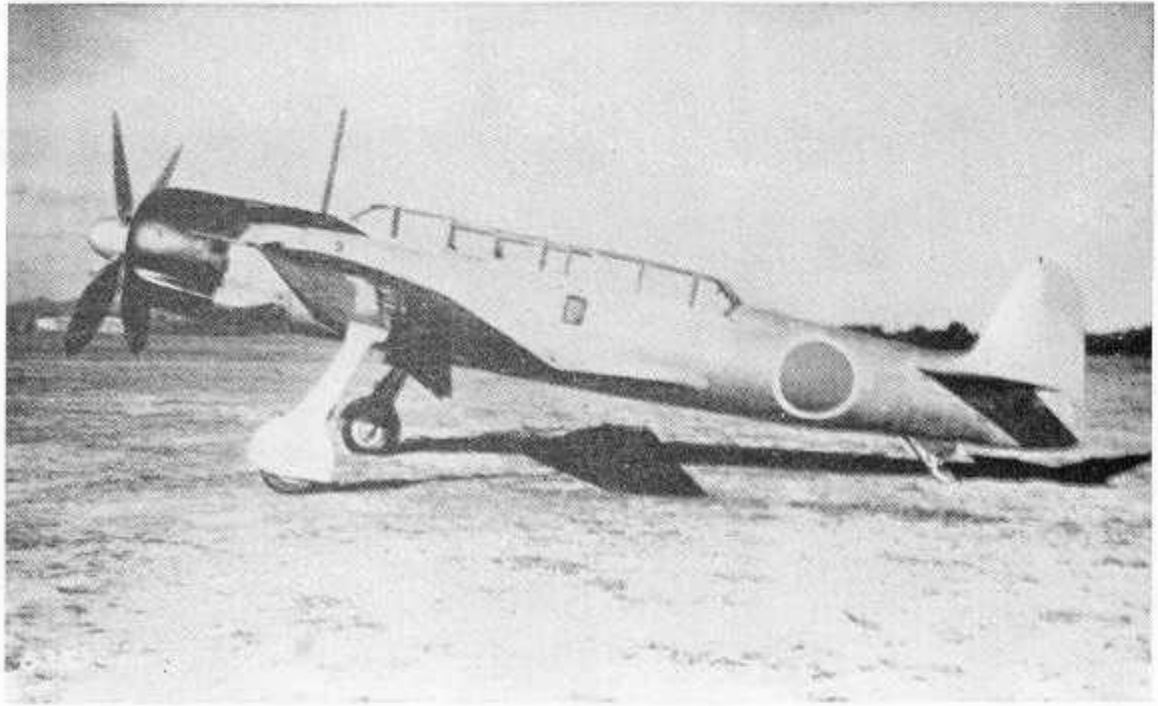
C

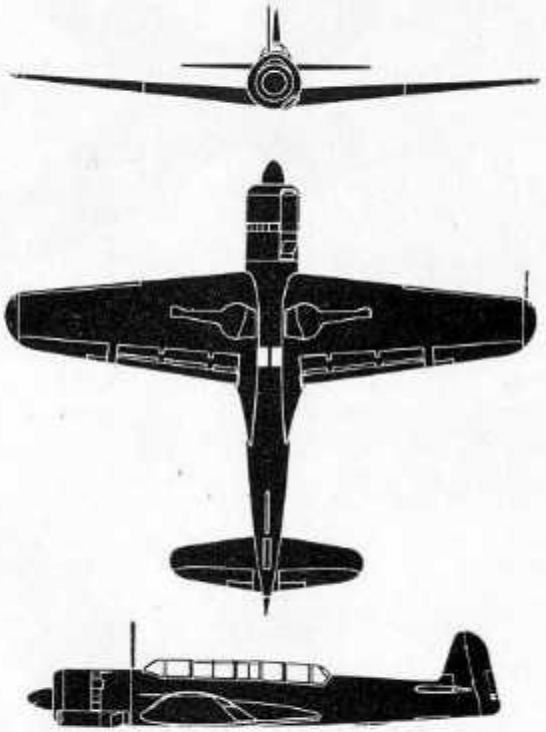


B

D

MYRT

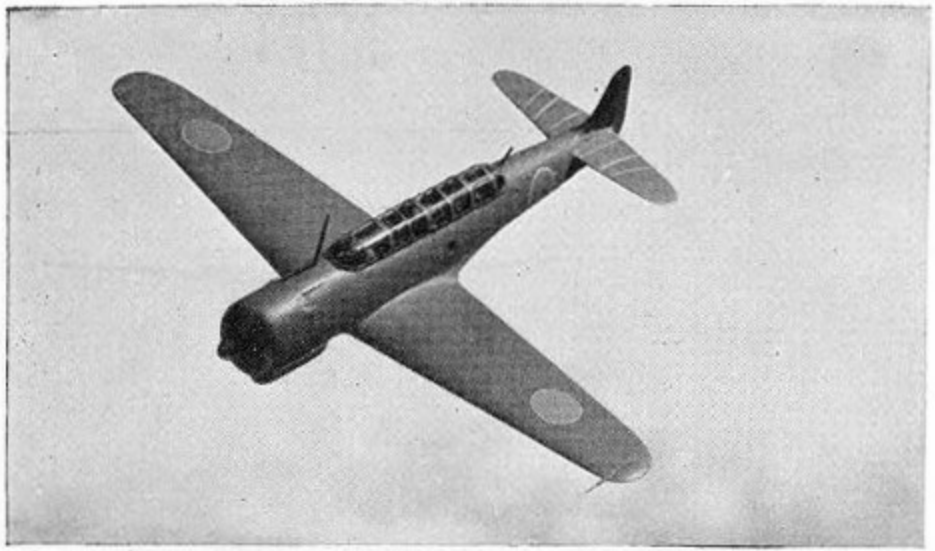




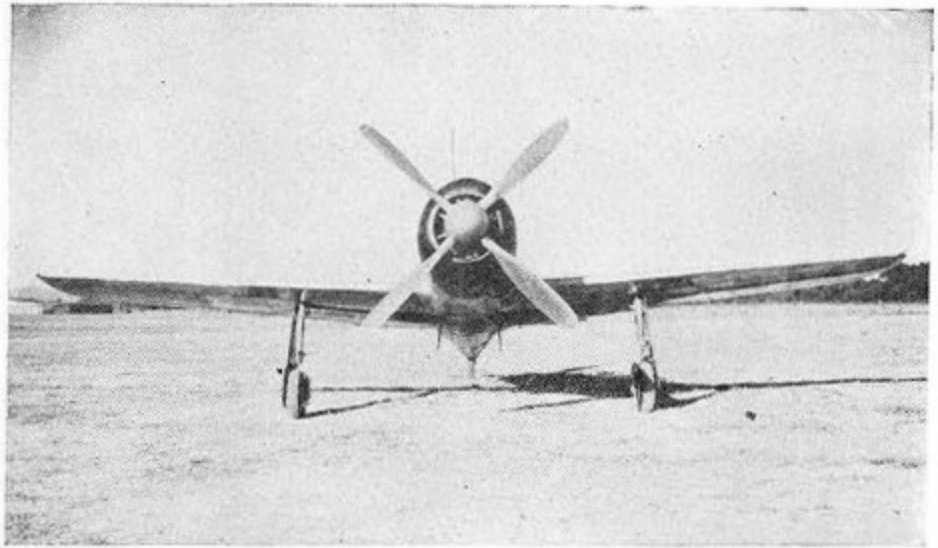
SPAN: 41 ft. 1 in. **SERVICE CEILING:** 36,100 ft.
LENGTH: 36 ft. 6 in.
APPROX. MAX. SPEED: 396 mph at 16,600 ft.

DISTINGUISHING FEATURES: Single - engine, low-wing monoplane. Long cylindrical nose with prominent air intake on the lowest port side. Long, raised greenhouse is straight topped and low. Fuselage is long and slim. Wing has equal taper with bluntly rounded tips and slight dihedral from the roots. Rather small fin and rudder appears to be raked forward.

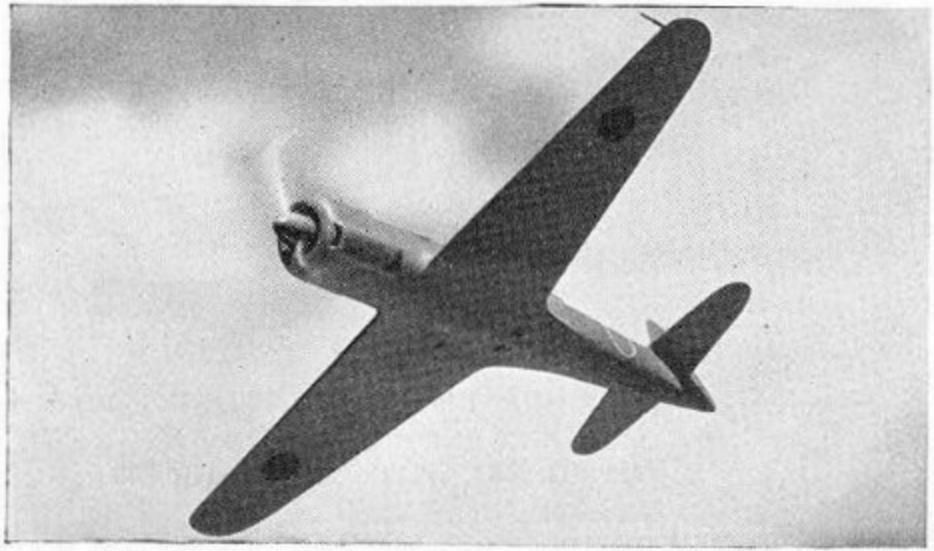
INTEREST: Myrt, with its 2,000 hp engine, continues the Japanese policy of designing high performance aircraft especially for reconnaissance. It is fast, maneuverable, and lightly armed, relying on its speed to escape interception. Carrier-based, it is credited with a normal range of 1,800 miles. Called "Saiun" or Painted Cloud, Myrt may carry an external torpedo.

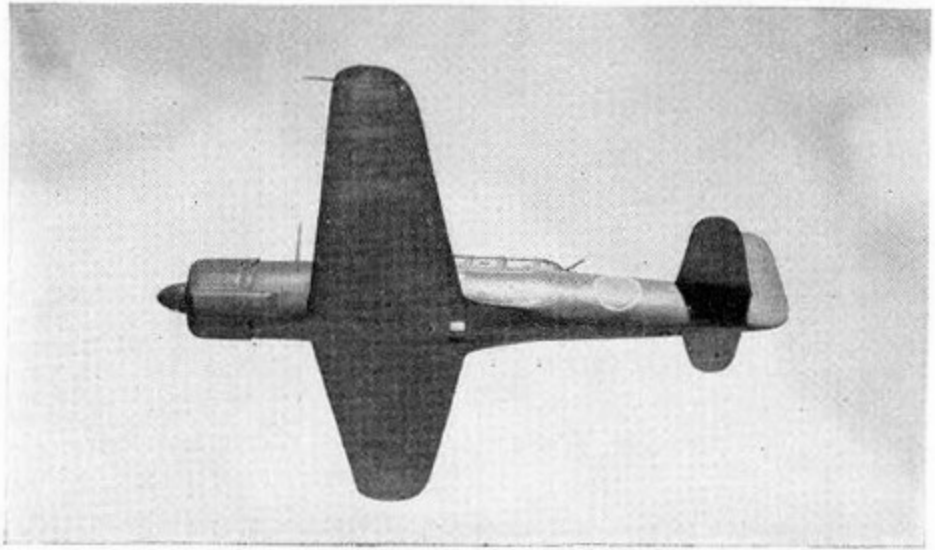


A ▲ B ▼



C ▲ D ▼



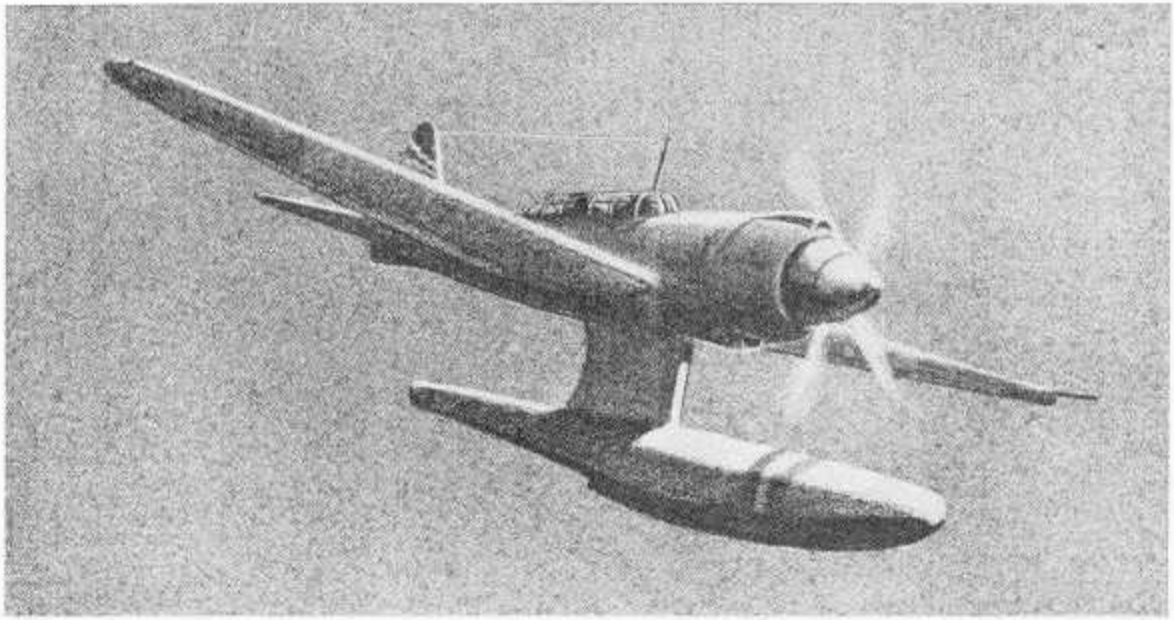


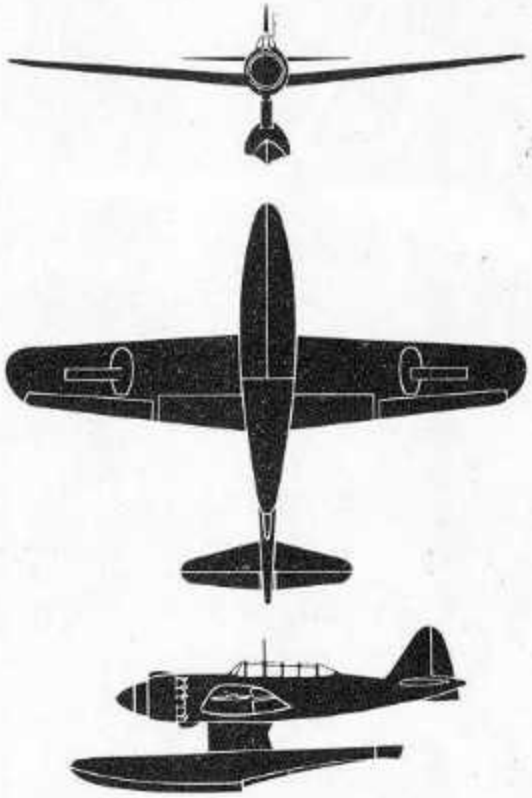
NAVY
KAWANISHI
JAPAN

RECONNAISSANCE

JAPAN

NORM





SPAN: 45 ft. 11 in. **SERVICE CEILING:**
LENGTH: 38 ft. 2 in.
APPROX. MAX. SPEED: 319 mph at 19,686 ft.

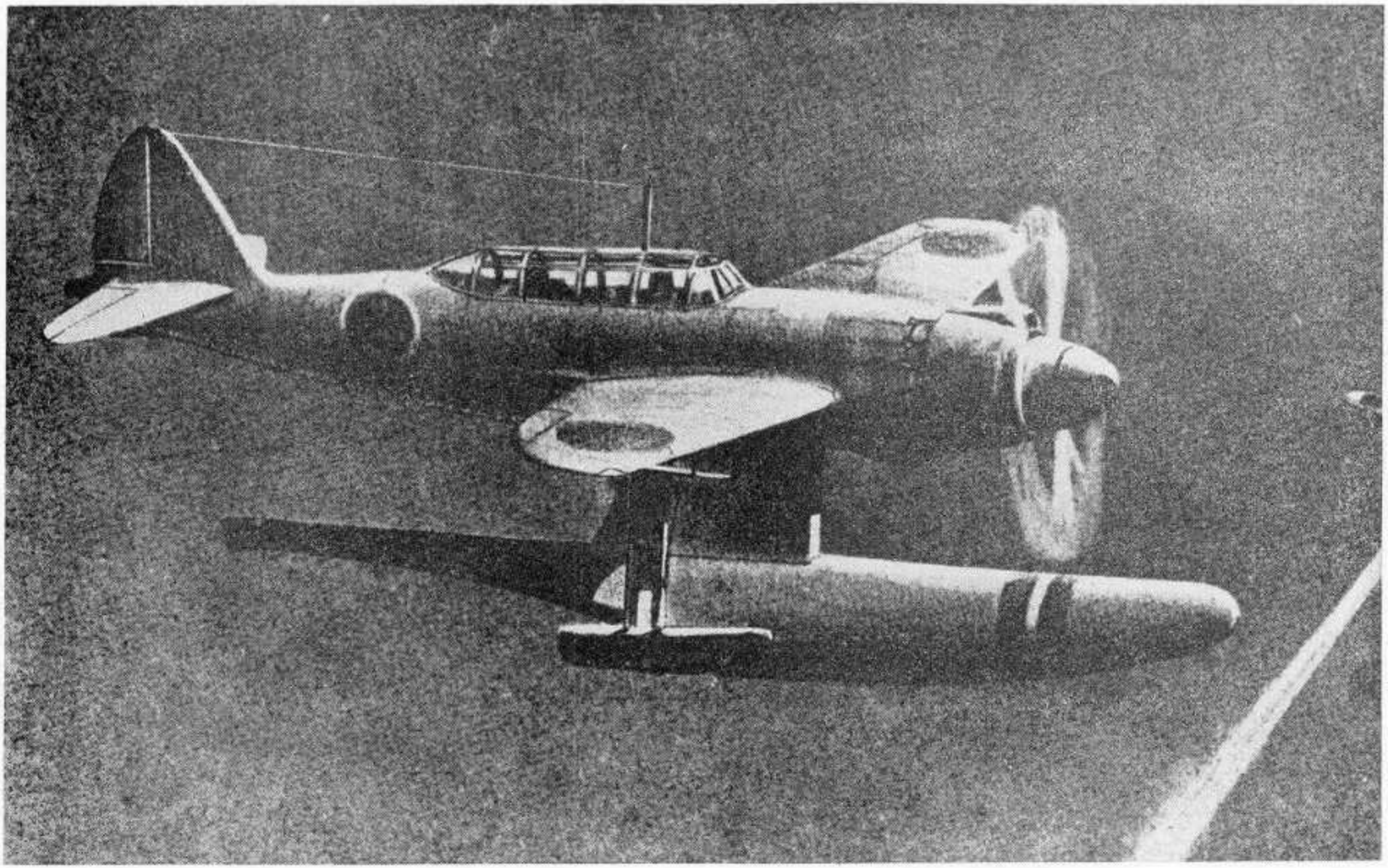
DISTINGUISHING FEATURES: Single-engine, low mid-wing monoplane with single central float and single fin and rudder. Huge spinner gives nose heavy pointed appearance. Raised, flat greenhouse. Wing has full dihedral and tapers to broad curved tips. Large single central float. Retractable wing tip floats. Fin extension projects beneath fuselage.

INTEREST: Norm is a high-speed reconnaissance float-plane. It is known by the Japanese as Shiun (Violet Cloud). Wing tip floats are retractable and it is reported that all floats may be jettisoned in case of emergency, in which case maximum speed would be increased to about 360 mph.

APRIL 1945
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT 3 { WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

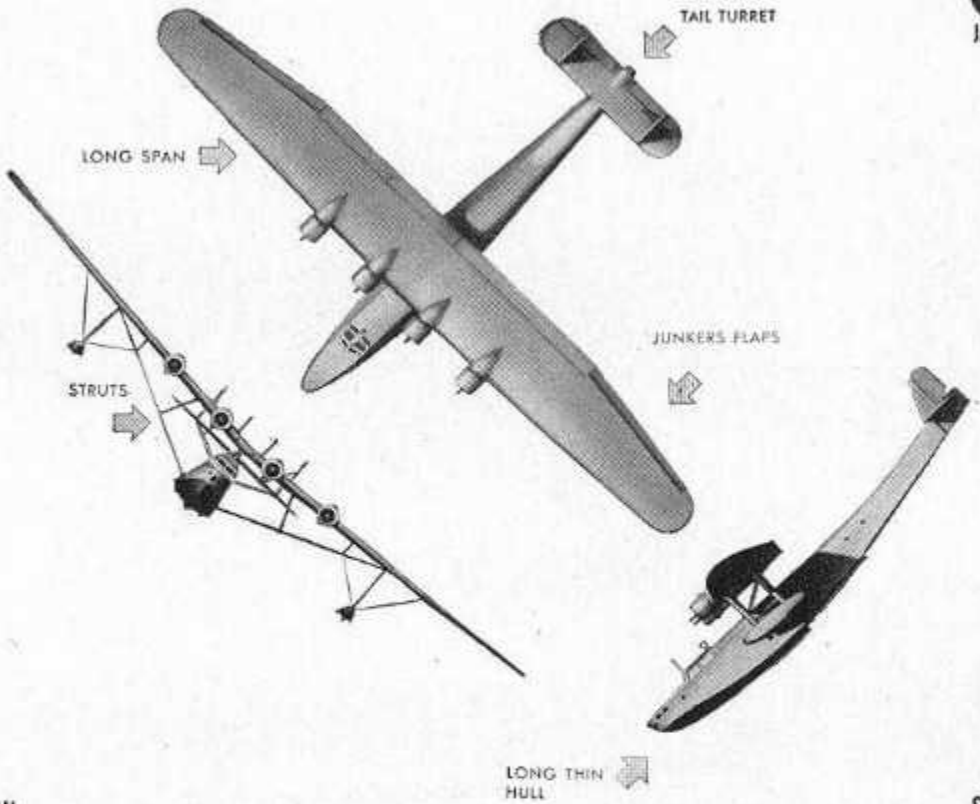
RESTRICTED

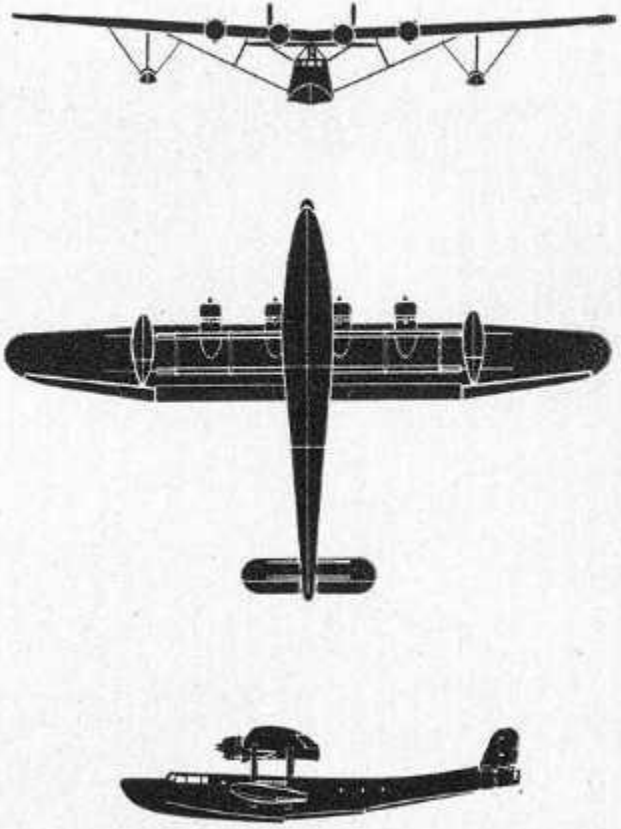


PATROL BOMBER

JAPAN

"MAVIS" TYPE 97 F/B





SCALE
6-FOOT MAN

KAWANISHI
JAPAN

DISTINGUISHING FEATURES: Four-engine parasol monoplane flying boat. Slight dihedral with outer sections tapered. Rounded tips. Engines centered on leading edge; small nacelles. Hull curves up to twin fins and rudders set inboard on stabilizer. Tail turret.

INTEREST: "Mavis" was among the first Japanese aircraft used in bombings over Australia and New Guinea. When carrying their maximum bomb load of 3,300 pounds, they have a range of 2,100 miles, and a crew complement of eight. Armament consists of four 7.7 mm. machine guns, one in the dorsal position, one in the nose, two on the sides, and one 20 mm. cannon in the tail turret.

SPAN: 131 ft.
LENGTH: 82 ft.
APPROX. SPEED: 205 m. p. h. at 8,000 ft.
SERVICE CEILING: 25,000 ft. (normal load)

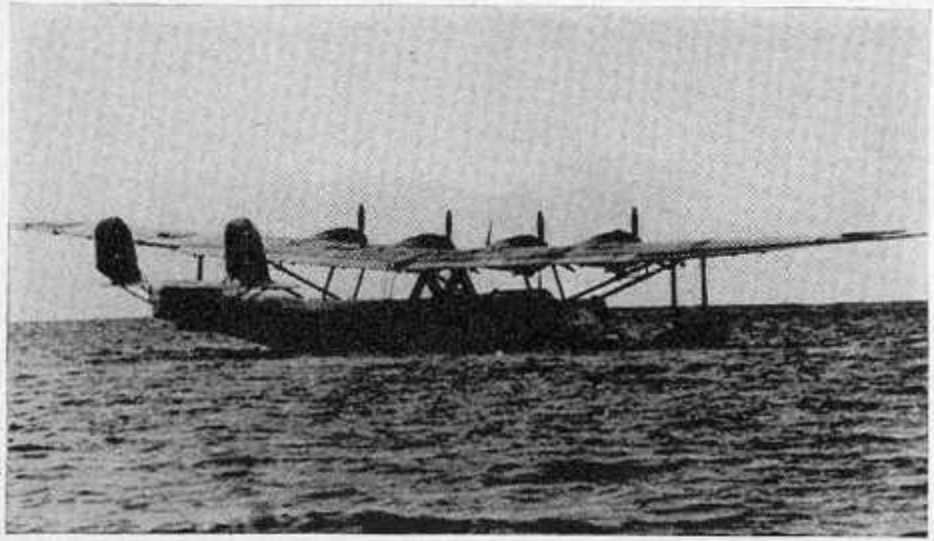
RESTRICTED

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

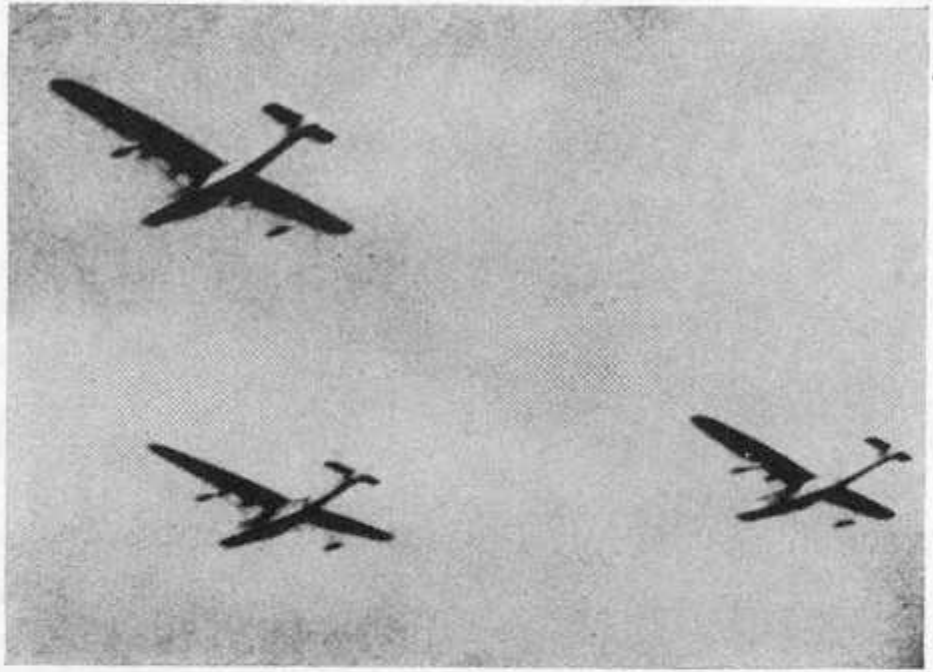
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

A

B



C

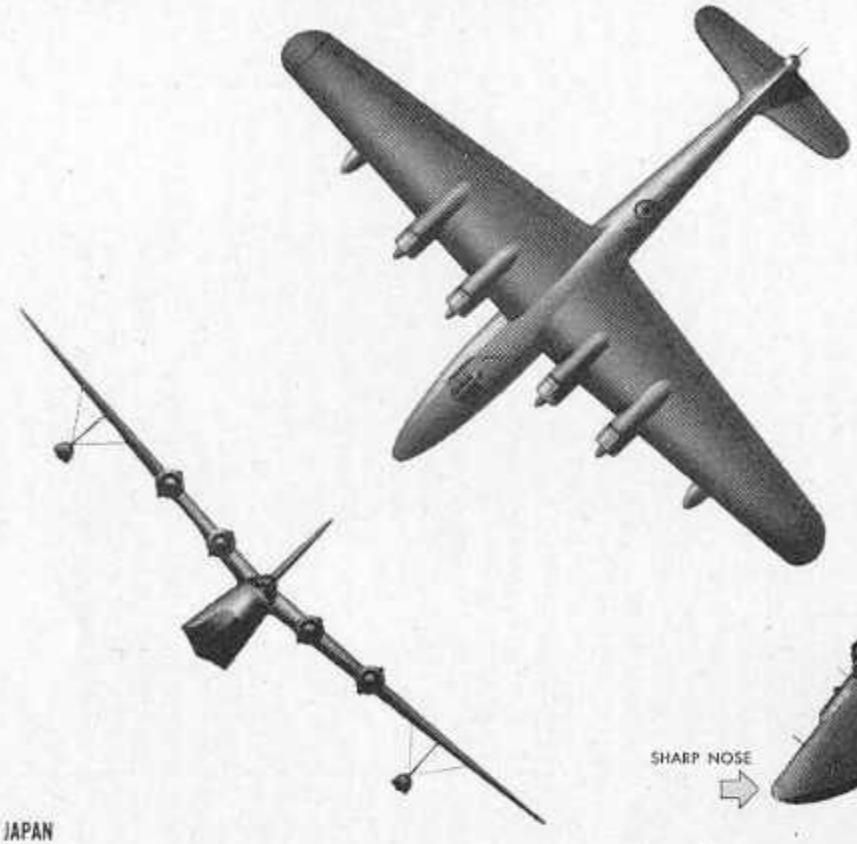


D

PATROL-BOMBER

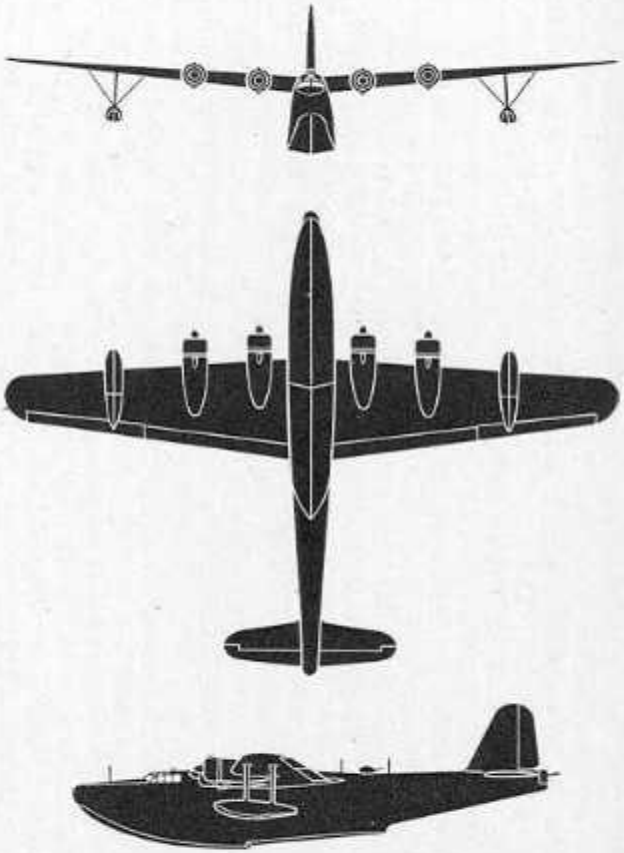
JAPAN

EMILY



JAPAN

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Four radial engine, high-wing flying boat. Wing has marked taper from the roots. Trailing edge of wing tip curves sharply to small rounded point. Deep hull has a long nose tapering forward from leading edge of wing. Large high bell-shaped fin and rudder. Tailplane has tapered edges and rounded tips.

INTEREST: This flying boat is known by the code name of Emily and is one of the largest planes in the Japanese Naval Air Forces. U. S. planes on reconnaissance over Jap-held islands in the Southwest Pacific have reported this plane on several occasions in recent months. Reports indicate that it is operational in limited numbers and that it will be seen more and more frequently.

SPAN: 118 ft. (Approx.)
LENGTH: 90 ft. (Approx.)
MAX. SPEED:
SERVICE CEILING:

RESTRICTED

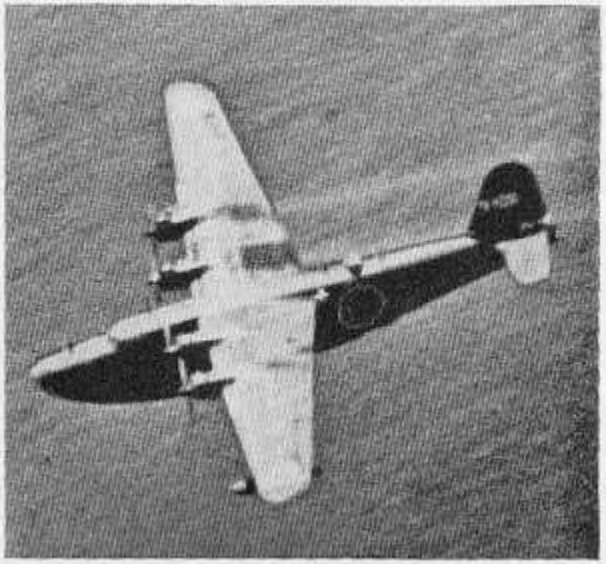
NOV. 1943
FROM DATA CURRENTLY AVAILABLE

A

B

C

D

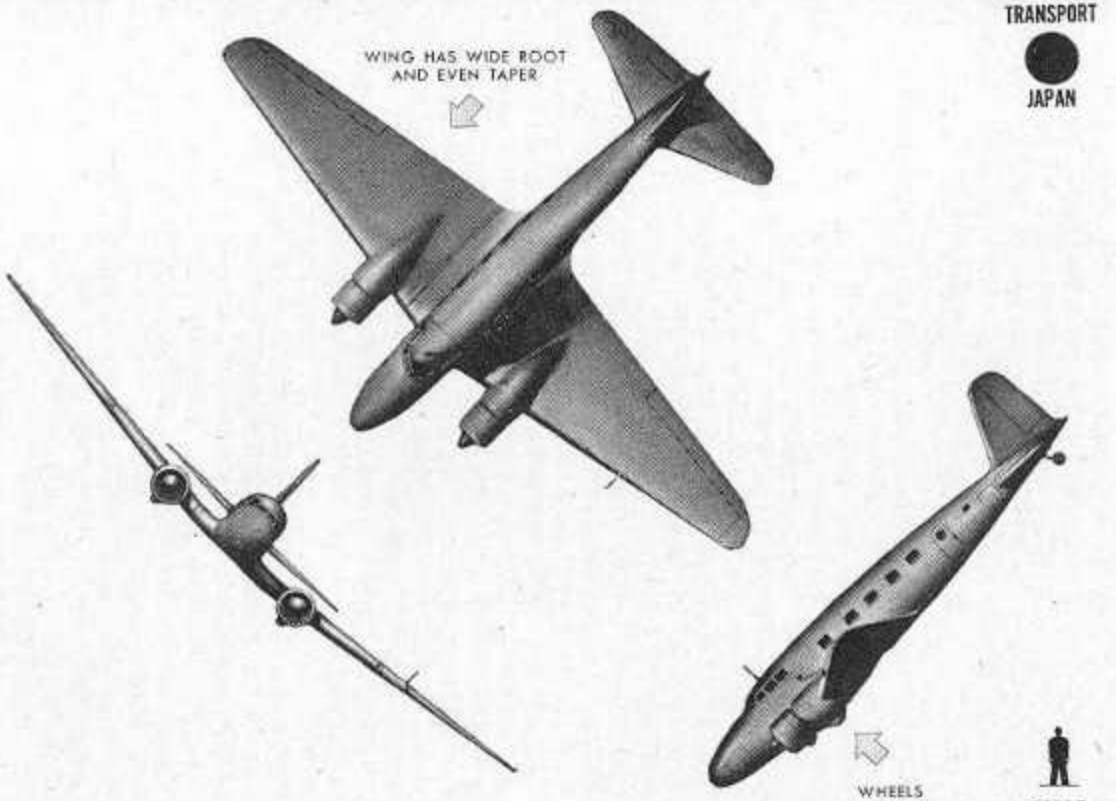


E

TOPSY

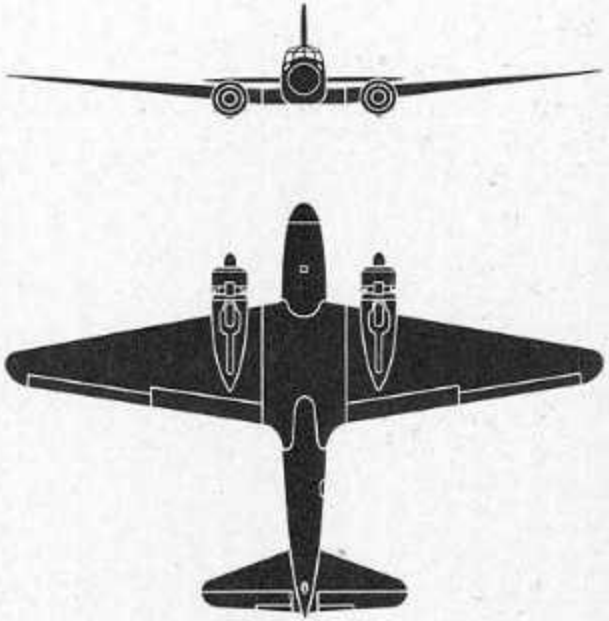
TRANSPORT

JAPAN



SCALE
6-FOOT MAN

MITSUBISHI
JAPAN



SPAN: 74 ft.

SERVICE CEILING: 23,000 ft. with normal load

LENGTH: 25 ft. 8 in.

MAX. SPEED: 266 m. p. h. at 10,500 ft.

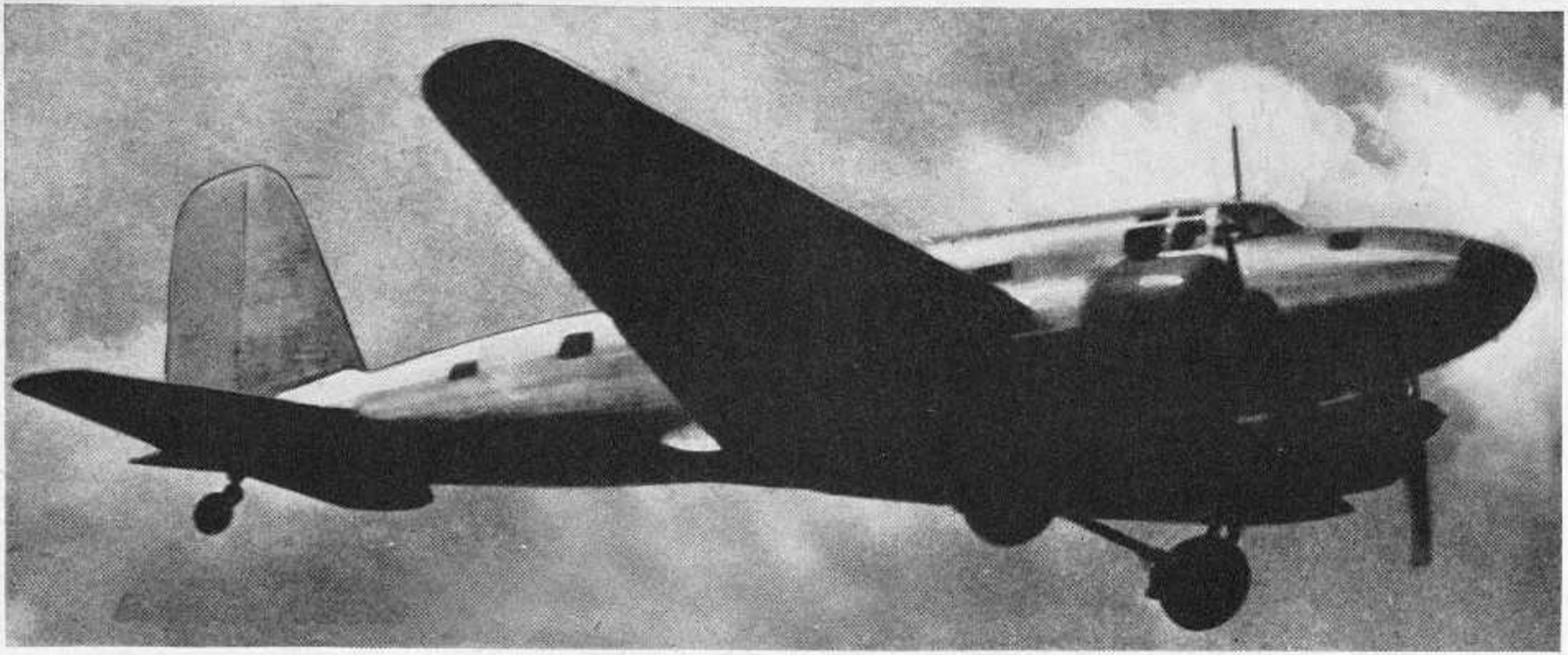
DISTINGUISHING FEATURES: Twin-engine, low-wing monoplane. Wing tapers sharply to rounded tips and has pronounced dihedral. Nose is long and sharply rounded. Fuselage smooth except for break at pilot's cockpit and tapers symmetrically to point at tail. Tail surfaces have pronounced taper on leading edge with rounded tips. Fixed tail wheel, retractable landing gear.

INTEREST: This aircraft has been used in paratroop operations in the Southwest Pacific. It has a cruising range of 1,020 miles with normal fuel and cargo load at an average speed of 197 m. p. h. and at an altitude of 9,200 feet. It is a military version of the Mitsubishi commercial transport, type MC–20, for which sales were solicited in South America before the war.

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

RESTRICTED

A



B

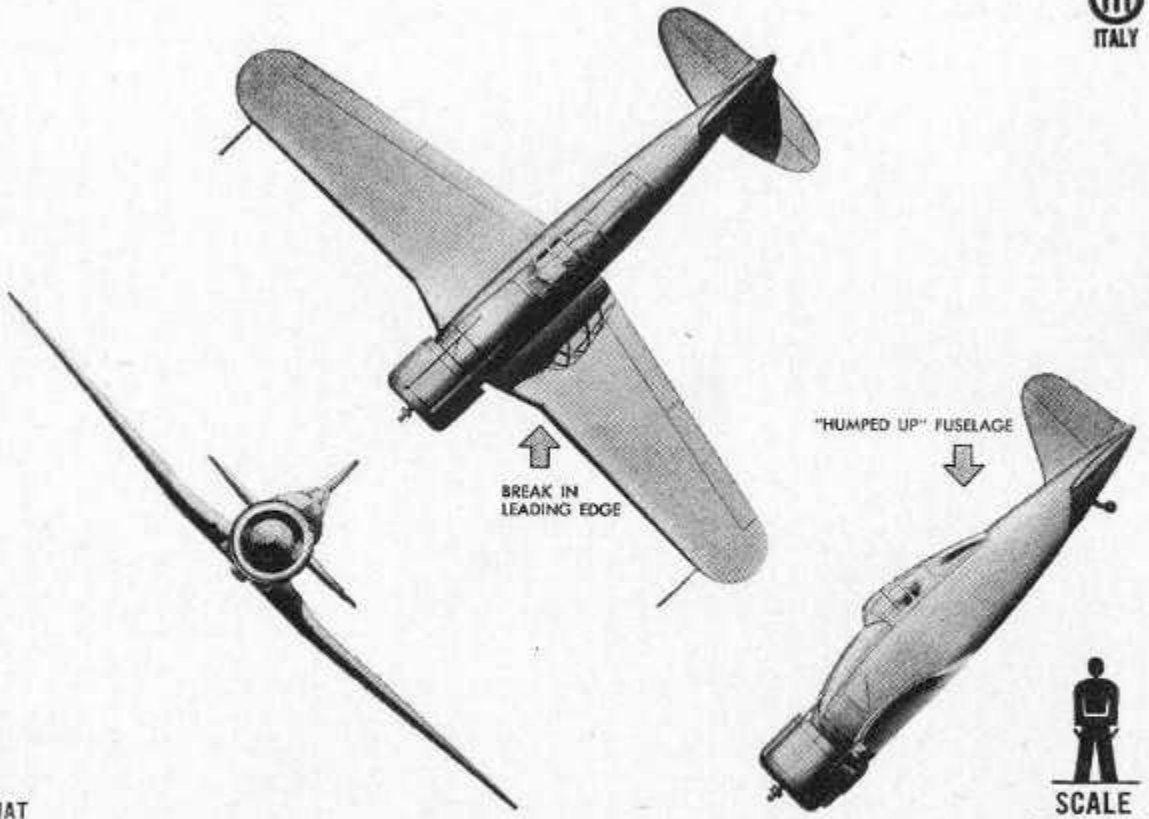
C

ITALIAN AIRCRAFT

FIGHTER

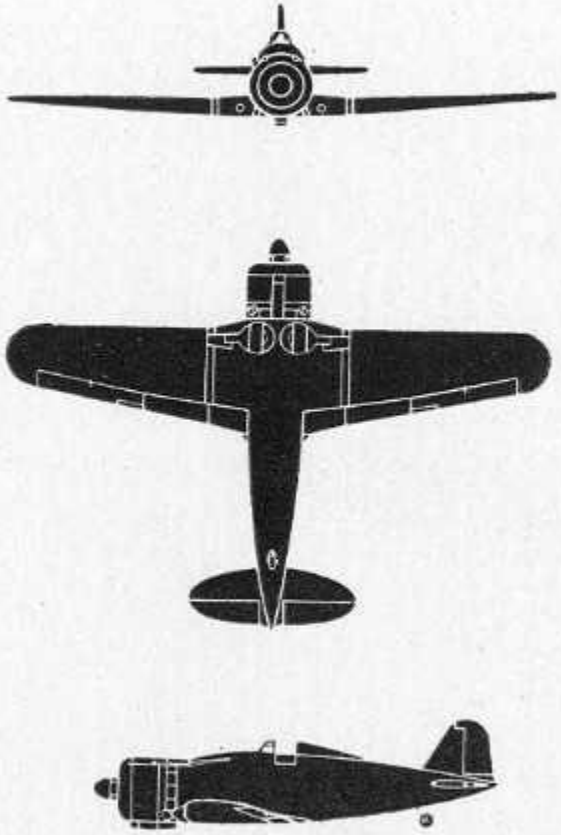
ITALY

"FIAT G-50"



FIAT
ITALY

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Single radial engine low-wing monoplane. Center section of the wing tapers more sharply than outer sections. Outer sections have moderate taper to rounded tips. Scoop shows below cowling. Narrow fin and rudder with rounded top.

INTEREST: The G-50 has been known as the "Falcon." It was considered one of the best Italian fighters during the early months after the Battle of France. At the present time its use is much restricted. It has been reported to be difficult to maneuver and unstable. It is of all-metal construction, and the armament consists of two 12.7 mm. machine guns with provision for two 7.7 mm. fixed wing guns.

SPAN: 35 ft. 9 in.
LENGTH: 25 ft. 6 in.
MAX. SPEED: 300 m. p. h. at 14,500 ft.

SERVICE CEILING:
32,500 ft.

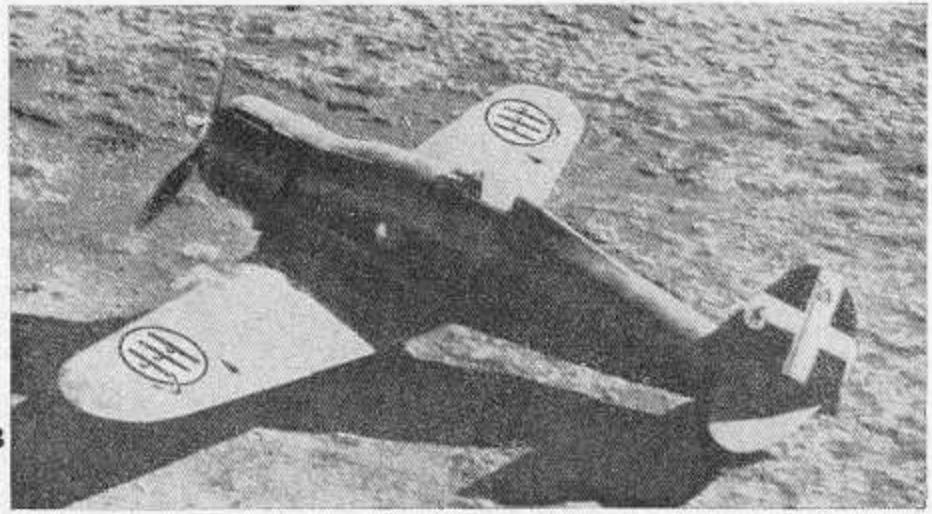
RESTRICTED

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

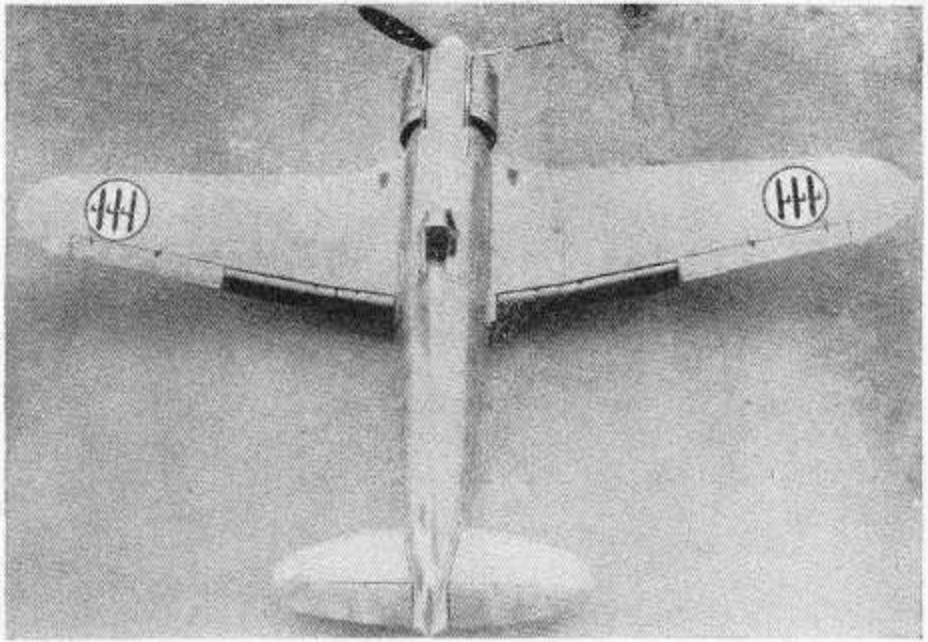
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

A

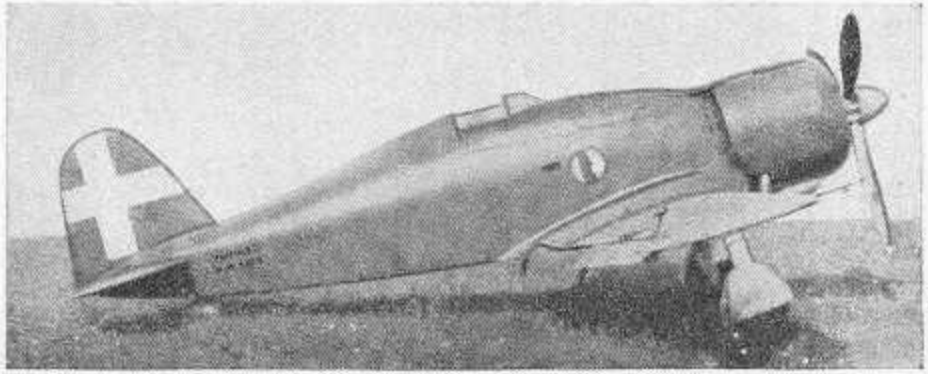
B



C



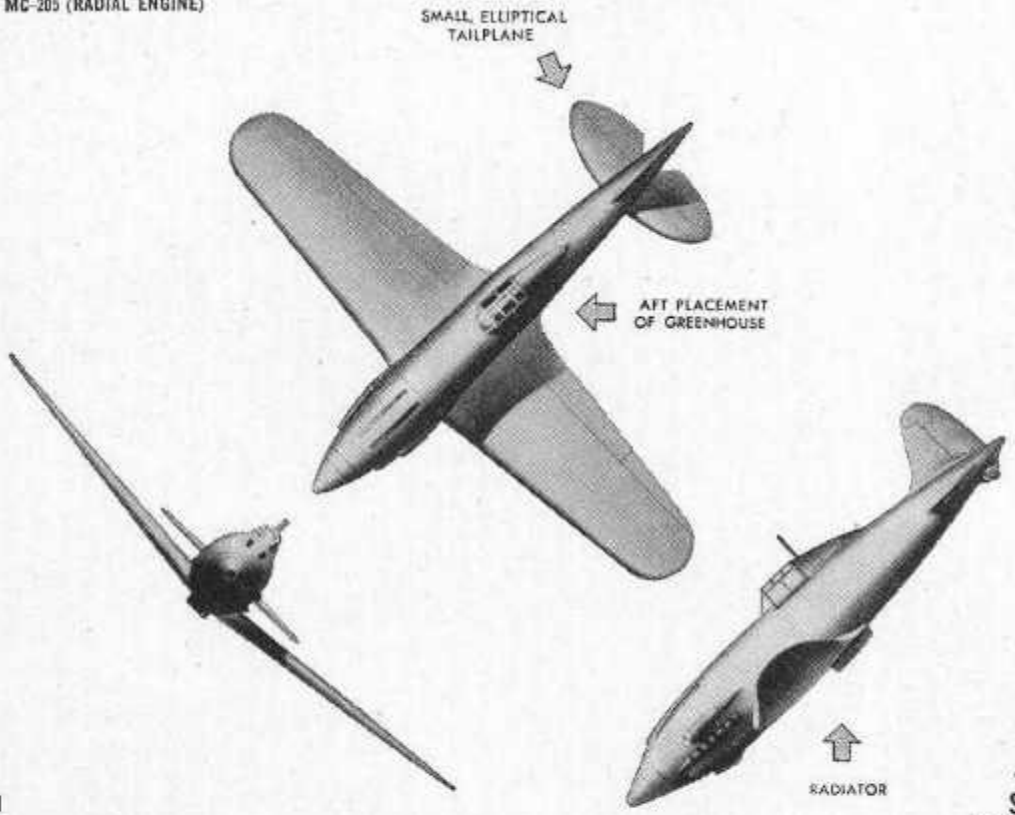
D



ITALY: MC-202
MC-200 (RADIAL ENGINE)
MC-205 (RADIAL ENGINE)

FIGHTER

ITALY



MACCHI
ITALY

SCALE
6-FOOT MAN

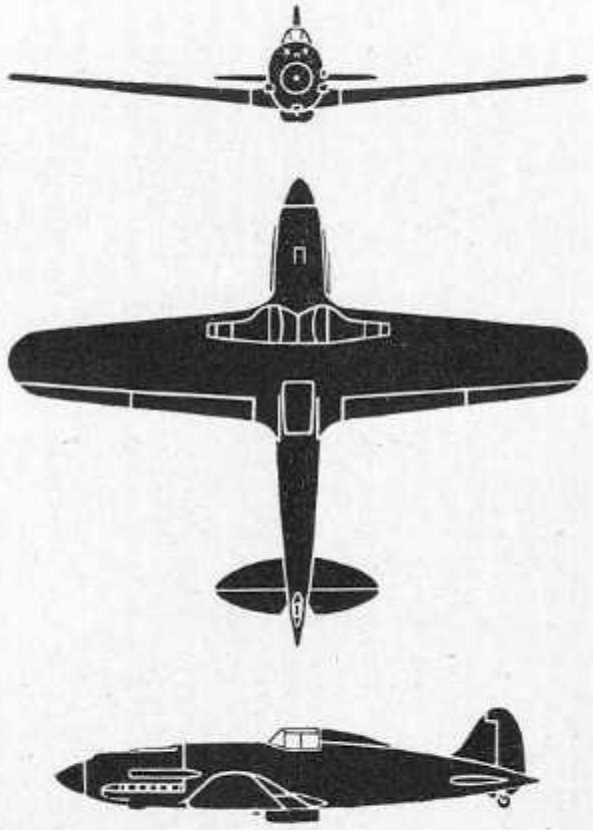
DISTINGUISHING FEATURES: Single in-line engine, low-wing monoplane. Wings have dihedral from roots with equal taper and rounded tips. Long nose and spinner. Small cockpit canopy. Torpedo-shaped fuselage. Tapered fin and rudder. Elliptical tail plane.

INTEREST: A number of these planes have been used in combat over Egypt, Libya, and Malta. To date, they have had only a little better success than the MC 200, an earlier version of this plane which has a radial engine. Apparently they are not as fast as they should be, nor are they adequately armed, although they are capable, in some instances, of keeping pace with Allied medium and light bombers. Unlike the MC-200, the cockpit cover of this plane is not transparent all around, and with its lengthened nose, it is questionable whether the pilots of the MC-202 have sufficient visibility.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

MACCHI "MC-202"



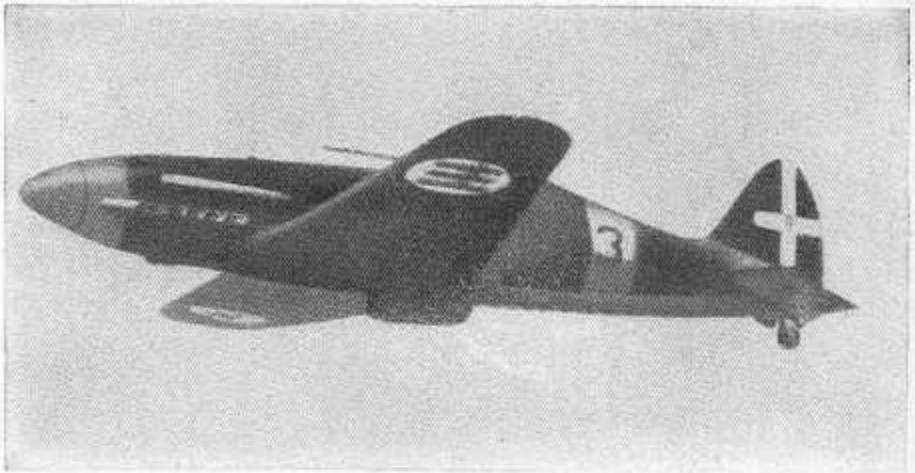
SPAN: 34 ft. 8 in.
LENGTH: 29 ft. 1 in.
MAX. SPEED: 360 m. p. h. at 20,000 ft.

SERVICE CEILING:
36,000 ft. (max.)

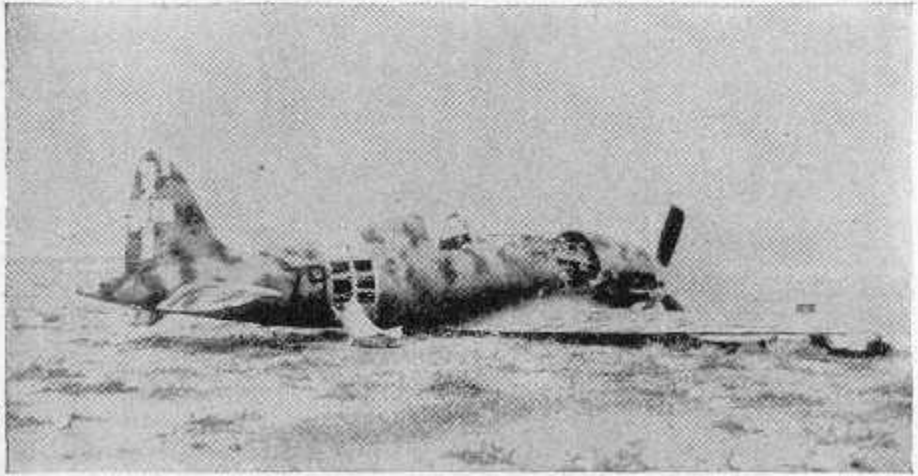
RESTRICTED

A

C



B



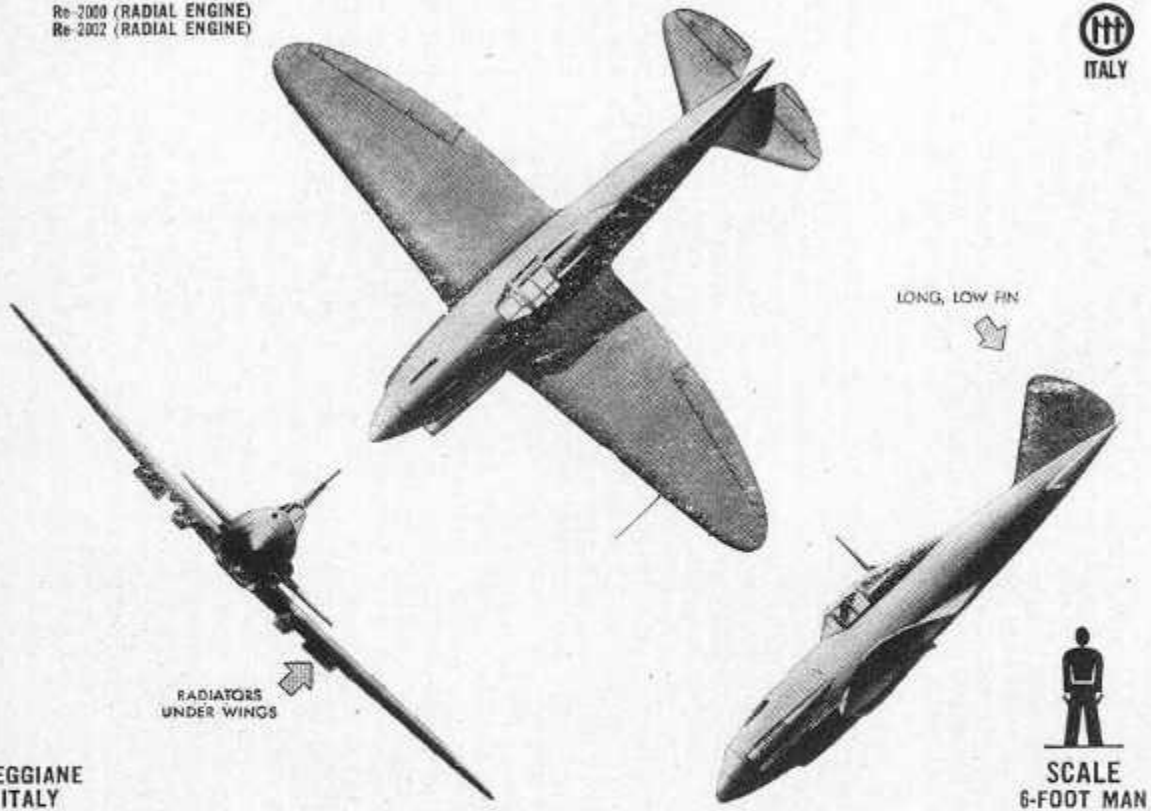
D

ITALY: Re-2001

FIGHTER

Re-2000 (RADIAL ENGINE)
Re-2002 (RADIAL ENGINE)

ITALY



REGGIANE
ITALY

SCALE
6-FOOT MAN

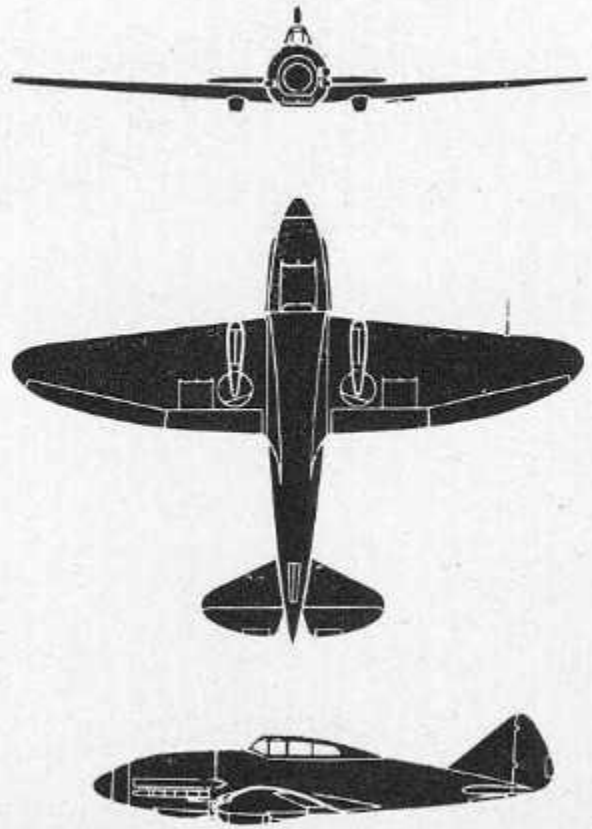
DISTINGUISHING FEATURES: Single in-line engine low-wing monoplane. Wing is elliptical with more curve on trailing edge. Long pointed nose and spinner. Torpedo-shaped fuselage. Prominent cockpit enclosure. Two radiators under wings. Prominent bulging fairings cover landing gear when retracted. Fin tapers backward. Rudder rounded.

INTEREST: Except for its in-line engine, this plane is similar to the Re. 2000 and Re. 2002, which have radial engines. It is one of Italy's best fighters and has frequently been active over Malta. Its armament consists of two synchronized 12.7 mm. guns over the engine and two 7.7 mm. guns in the wings. As with the Re. 2000, the air frame is thought to have been developed from the American Republic Lancer (P-43). Adapted as a fighter bomber, the Re. 2001 may carry an 1,100-lb. bomb under the fuselage. Bomb carriers suitable for dive release may be fitted under the wings. It is nicknamed "Falco II" (the "Falcon II").

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-31
NAVY DEPARTMENT BUAER 0

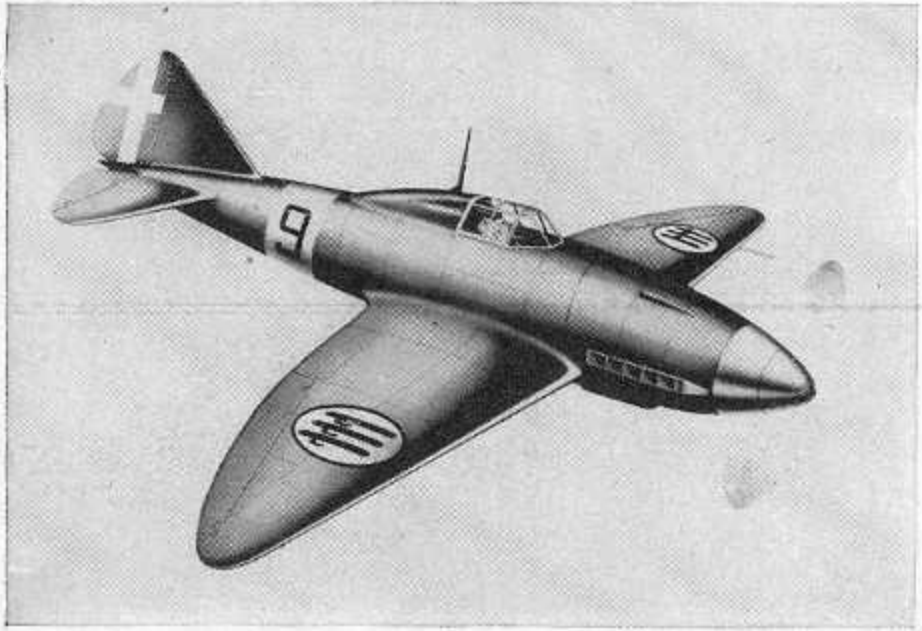
REGGIANE "RE-2001"



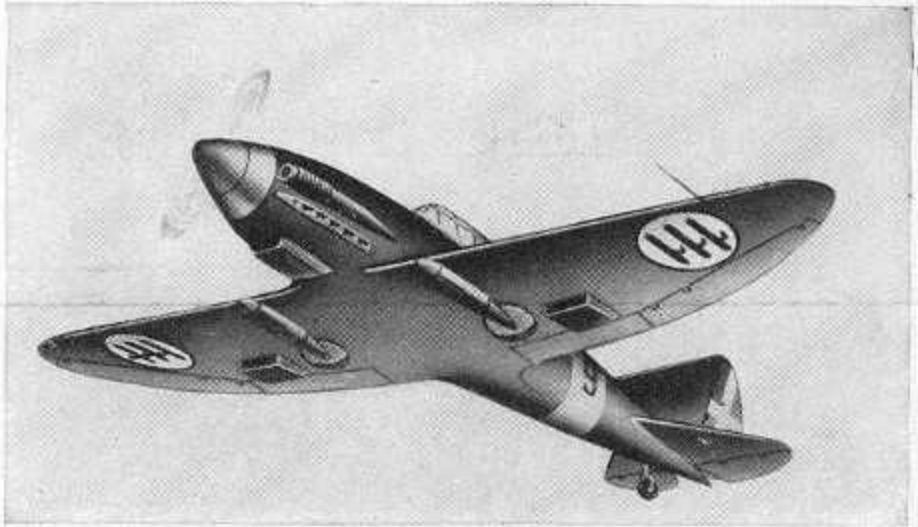
SPAN: 36 ft.
LENGTH: 27 ft. 4 in.
MAX. EMERGENCY SPEED: 350 m. p. h. at 20,000 ft.
SERVICE CEILING: 34,000 ft. (normal load)

RESTRICTED

A

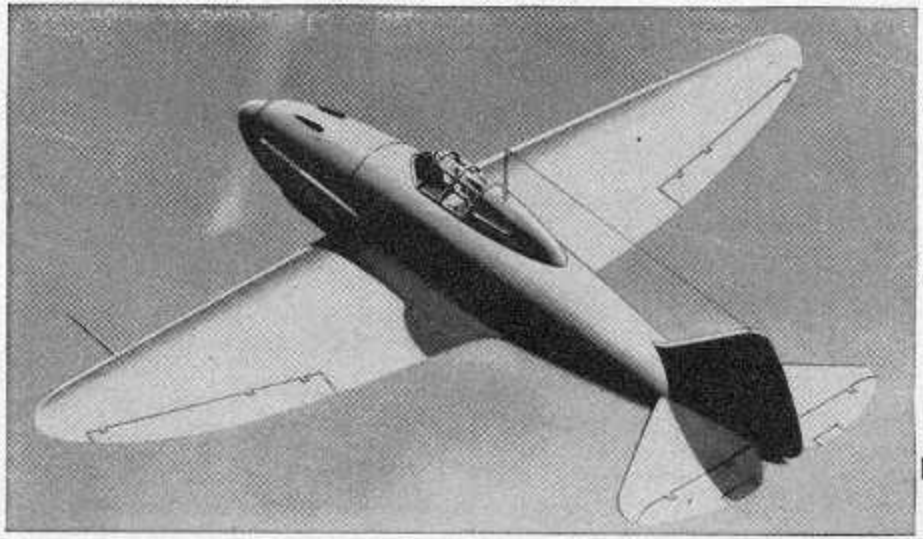


C



B

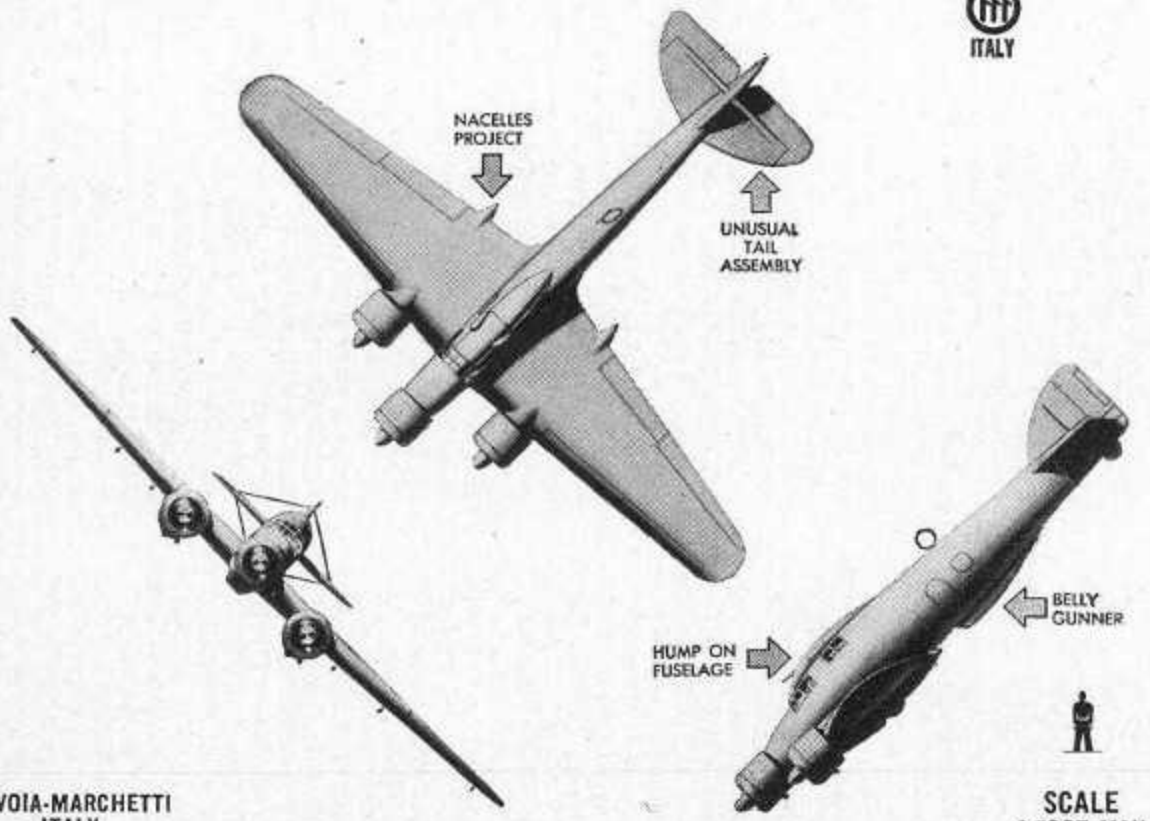
D



MEDIUM BOMBER—TRANSPORT

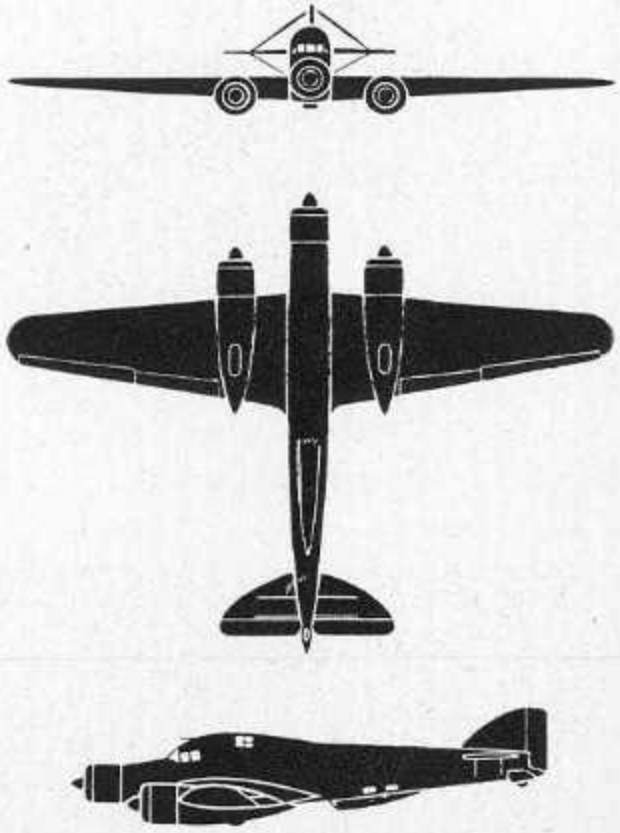
ITALY

SAVOIA-MARCHETTI "SM-79"



SAVOIA-MARCHETTI
ITALY

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Three-engine, low-wing monoplane. Tapered wings with more pronounced taper on trailing edge. Fuselage is humped at cockpit and tapers backward toward a low fin. Large radial motors. Ventral gondola visible. Rudder has straight trailing edge.

INTEREST: This is Italy's standard long-range bomber and Mussolini has more squadrons of this type than of any other bomber. It has served in Spain, and has been very extensively used in Africa, Albania, and over the Mediterranean. It has been used for torpedo attacks and it is interesting to note that the Allies consider Italian Torpedo Squadrons to be the most efficient in the Italian Air Force. Their torpedoes are believed to be superior to those of the Germans.

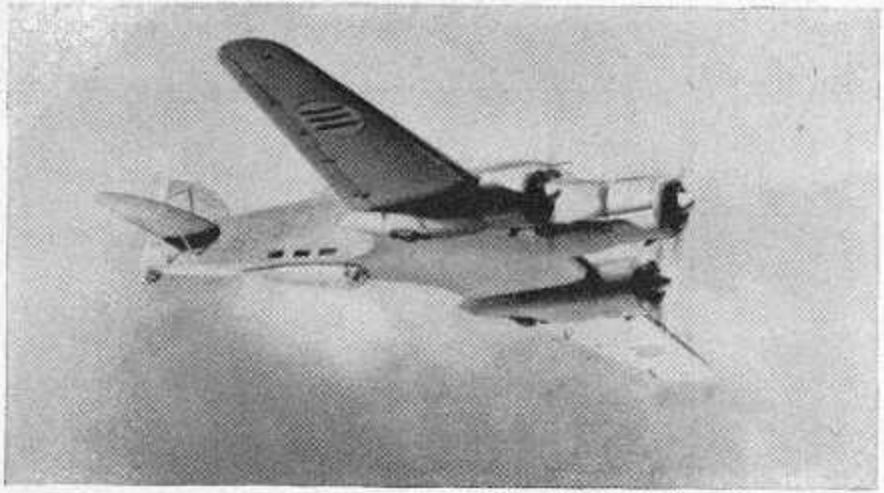
SPAN: 69 ft. 6 in.
LENGTH: 54 ft. 6 in.
SERVICE CEILING: 23,000 ft. (normal load)
MAX. EMERGENCY SPEED: 255 m. p. h. at 12,500 ft.

RESTRICTED

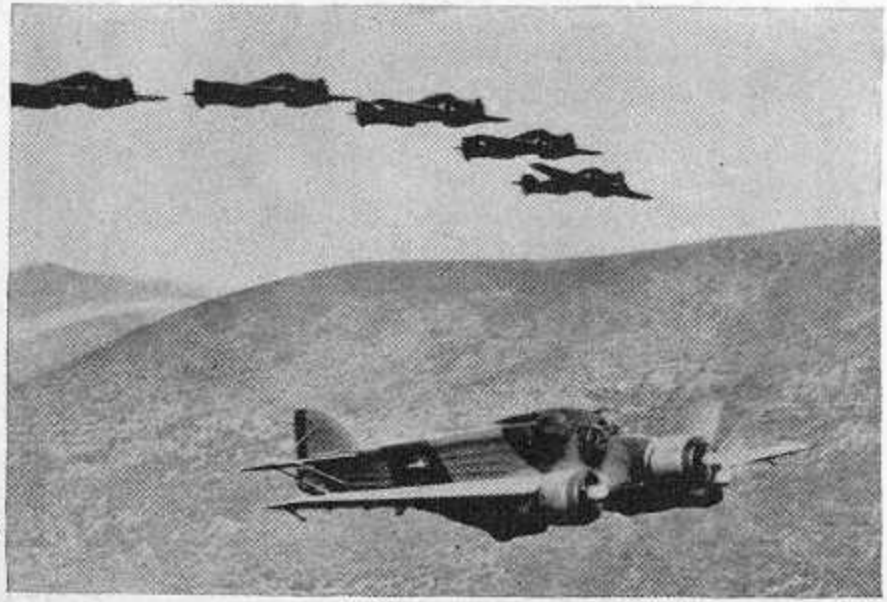
APRIL 1941
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-39
NAVY DEPARTMENT BUAER 3

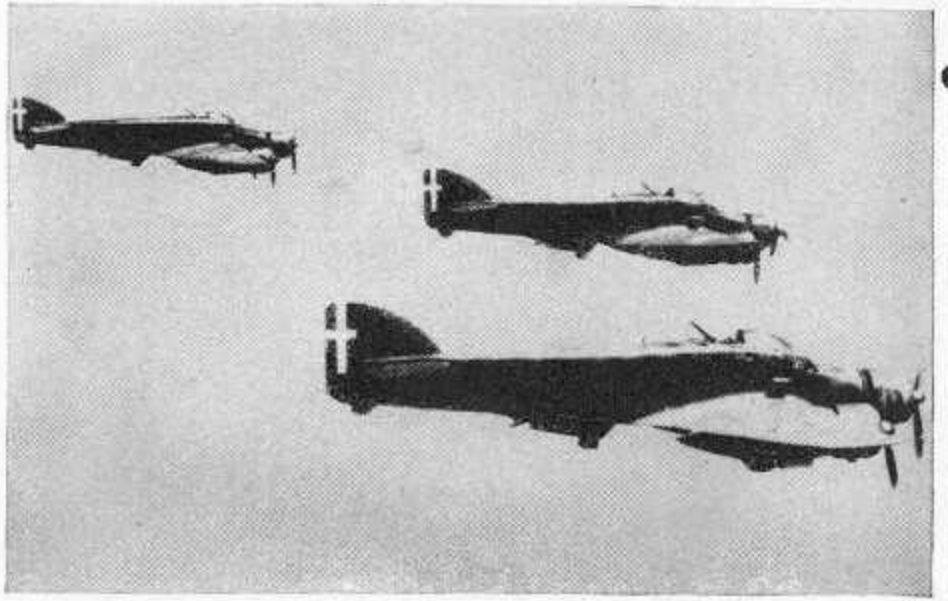
A



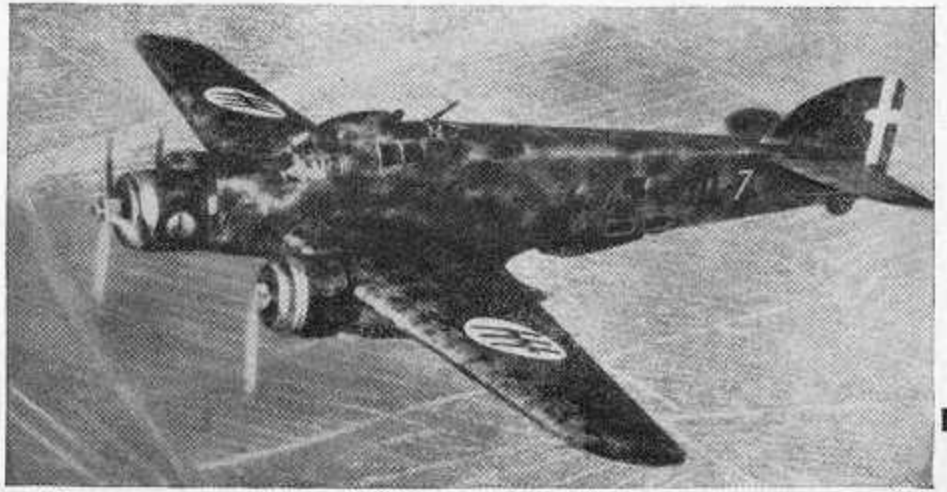
B



C



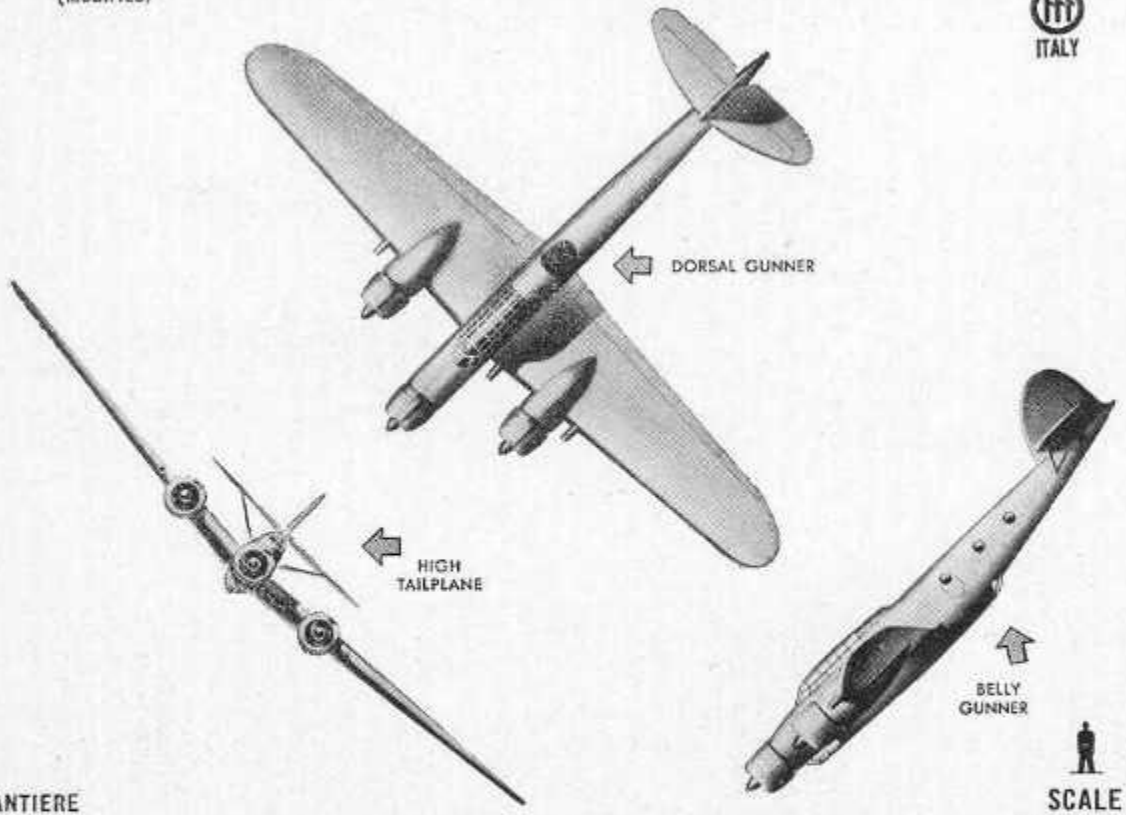
D



ITALY: CANT. Z-1007 bis
Cant. Z-1007 bis
(MODIFIED)

MEDIUM BOMBER

ITALY



SCALE
6-FOOT MAN

CANTIERE
ITALY

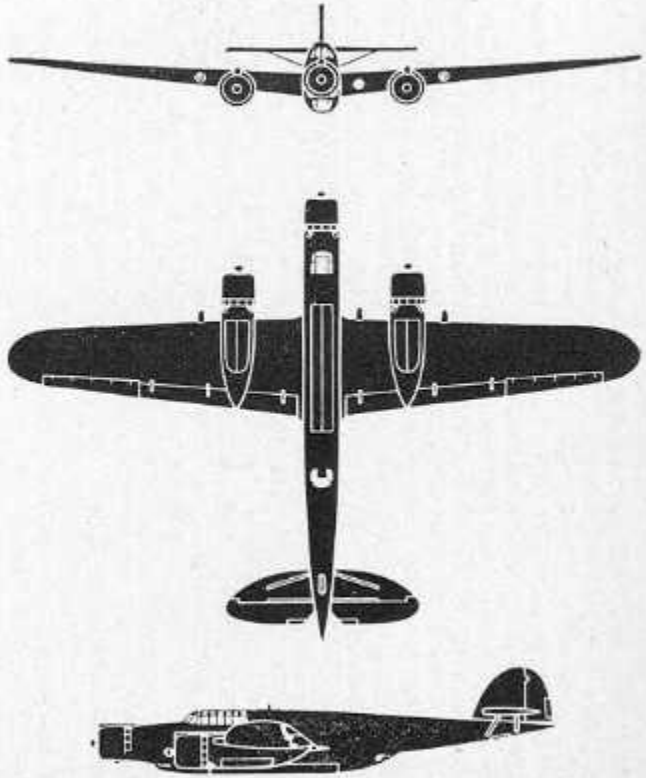
DISTINGUISHING FEATURES: Low-wing monoplane with three (3) radial engines. Wings have moderate taper and dihedral. Deep fuselage with raised cabin and bulging bomb aimer's position, bomb bay, and rear ventral gun position. Large curved fin and rudder. Strut braced, elliptical stabilizer and elevator. Later modified version has unbraced twin fins and rudders placed outboard (Photo C).

INTEREST: The "Alcione" ("Kingfisher"), as this airplane is called, is one of Italy's best bombers and has been used in every theater of operations in which Italian planes appear. It is constructed of nonstrategic materials such as wood and plywood skin. Its wings are made of plywood, covered with fabric. It will, in all probability, replace the older SM 79. It is believed that it may carry a torpedo stowed internally.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

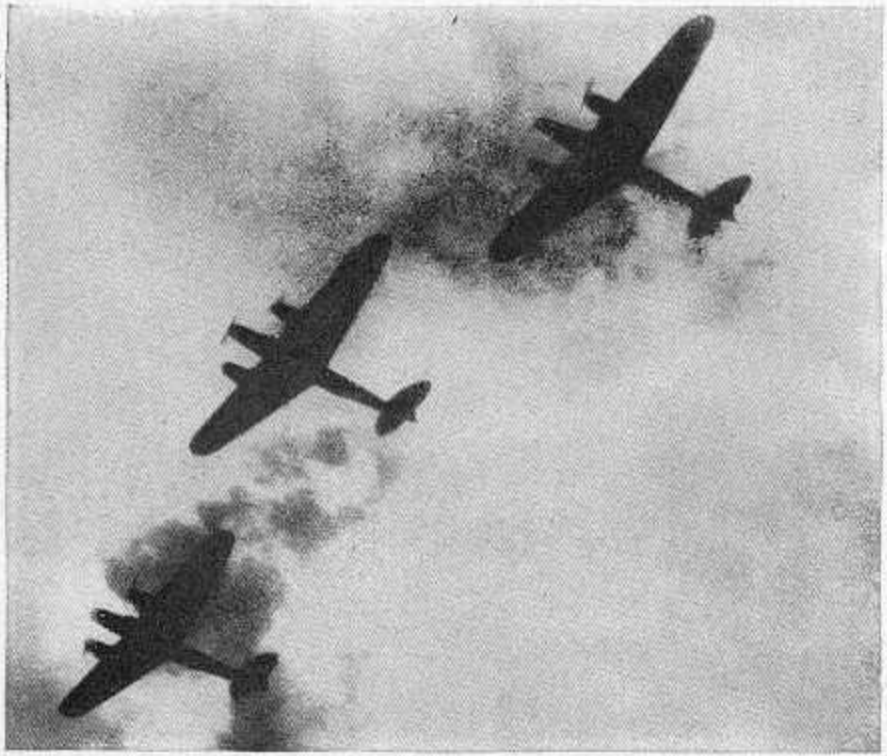
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

CANT. "Z-1007"

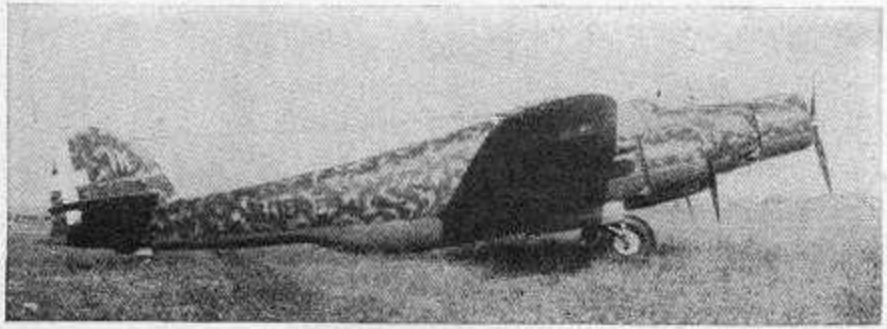


SPAN: 81 ft. 10 in.
LENGTH: 61 ft. 3 in.
MAX. EMERGENCY SPEED: 280 m. p. h. at 15,000 ft.
SERVICE CEILING: 26,500 ft. (normal load)

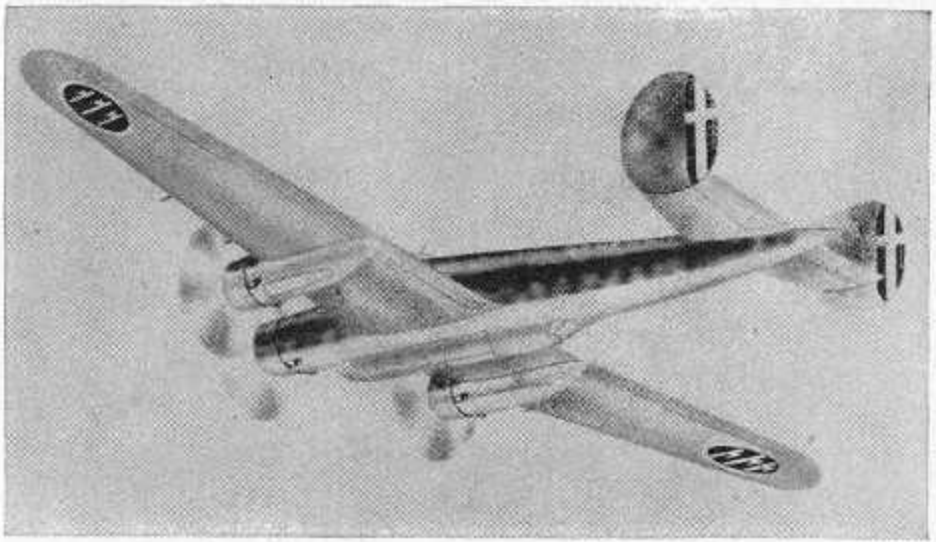
RESTRICTED



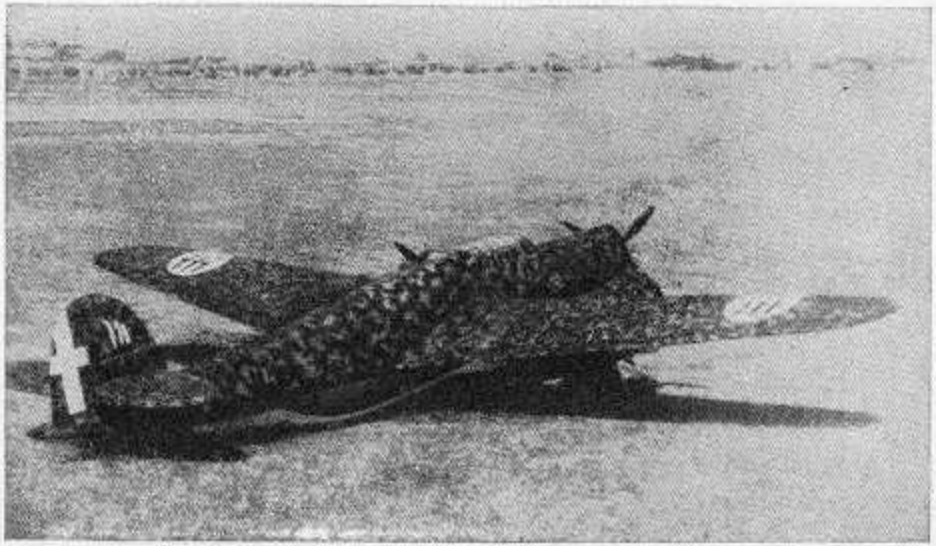
A



B



C



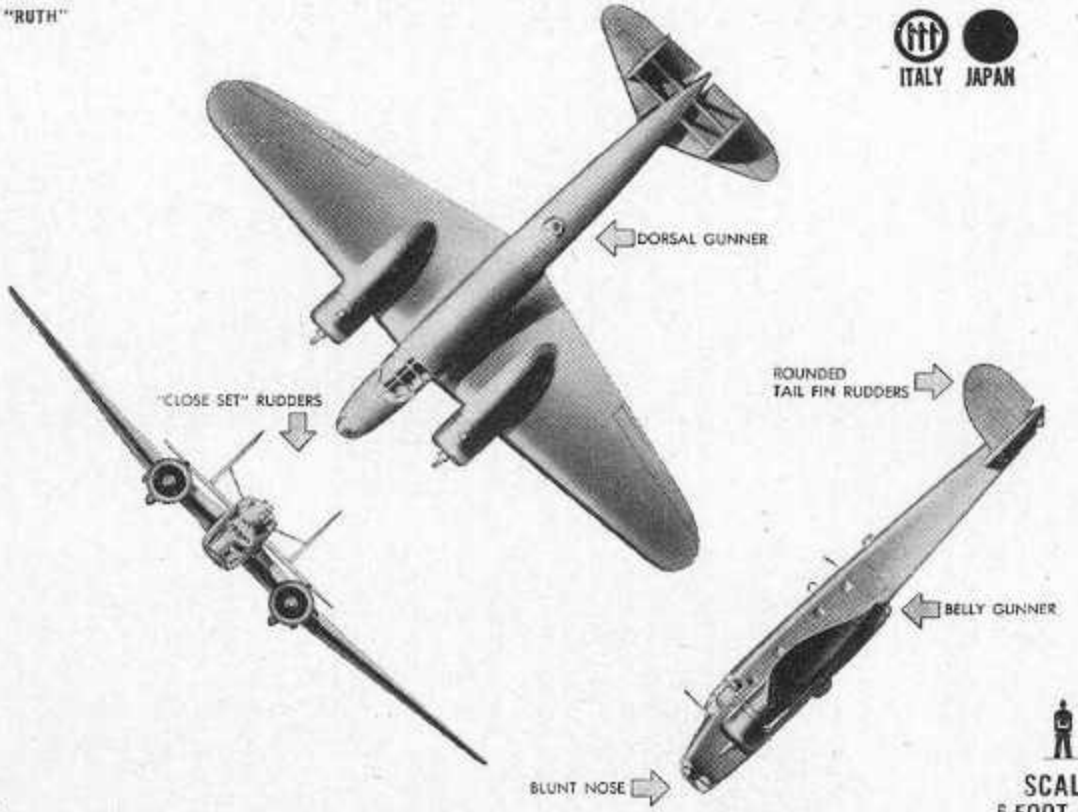
D

ITALY: FIAT BR 20

JAPAN: "RUTH"

MEDIUM BOMBER—TRANSPORT

ITALY JAPAN



FIAT
ITALY

SCALE
6-FOOT MAN

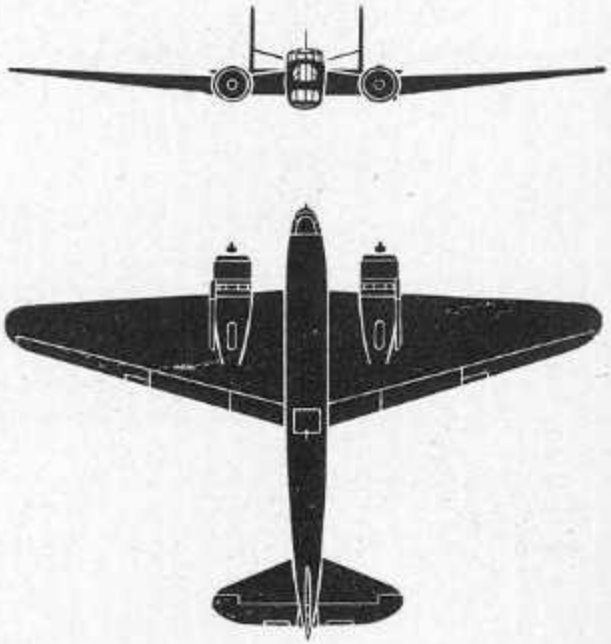
DISTINGUISHING FEATURES: Twin radial engine, mid-wing monoplane. Wings have moderate dihedral and extreme taper on trailing edge. Tapered fuselage houses dorsal turret and semiretractable ventral gun mounting. Elliptical strut-braced twin fins and rudders set inboard. Stabilizer and elevator have tapered leading edge and straight trailing edge.

INTEREST: The Br-20 is of all-metal construction. The fuselage aft of the wings is built of welded steel tubing with fabric covering. The forward part of the fuselage is of light metal construction. In November 1940, a flight of these bombers made one disastrous sortie against England from Belgian bases. It was never tried again. Its normal crew is five and it carries a maximum load of 3,500 lbs. of bombs for a range of 1,500 miles. In Italy it is known as the "Cicogna" which means "Stork." The Japanese bought a number of these bombers before the war, some of which have recently been reported in operational use.

APRIL 1943
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

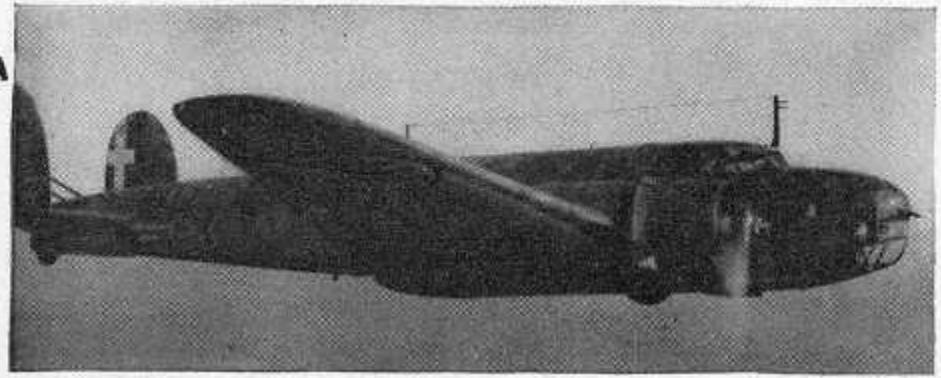
FIAT "BR-20"



SPAN: 70 ft. 6 in.
LENGTH: 52 ft. 10 in.
MAX. SPEED: 255 m. p. h. at 13,500 ft.
SERVICE CEILING: 25,000 ft. (normal load)

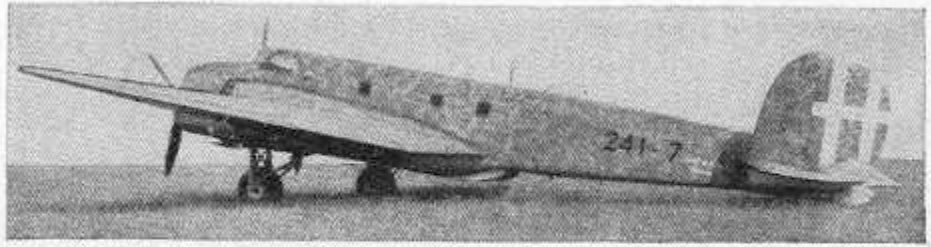
RESTRICTED

A

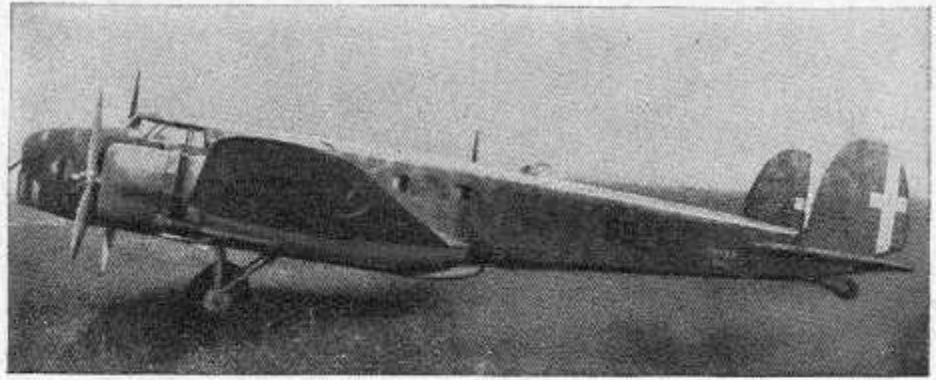


B

C



D



☆ UNITED STATES GOVERNMENT PRINTING OFFICE 517920°

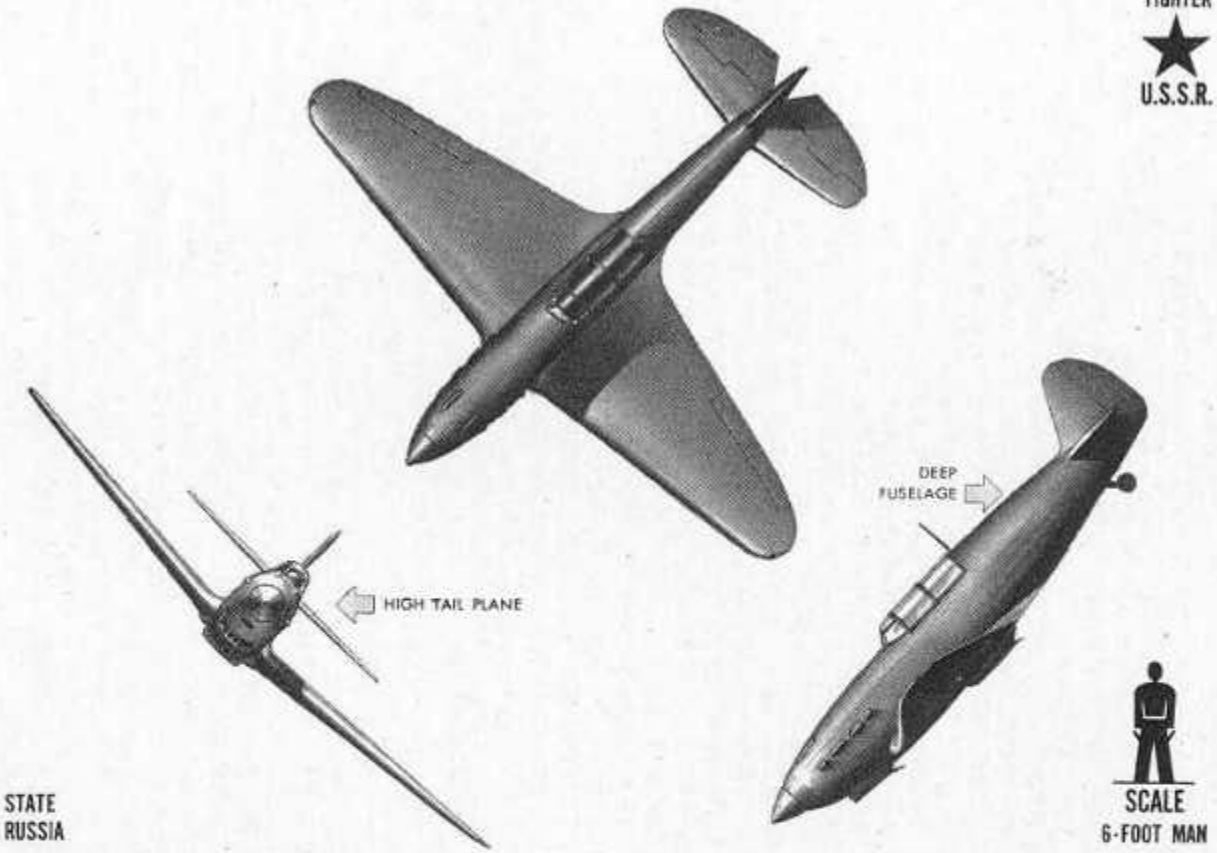
RUSSIAN AIRCRAFT

★
USSR

FIGHTER

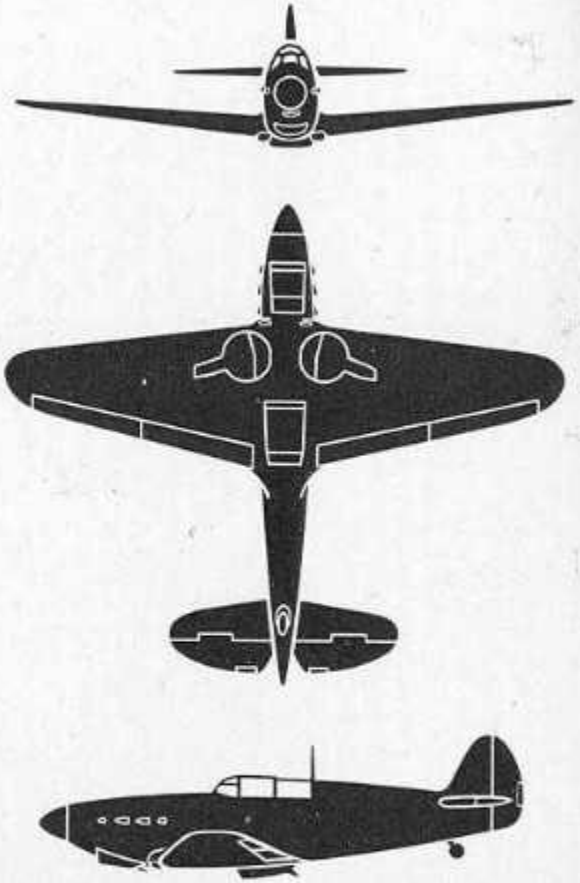
U.S.S.R.

YAK-1 (I-26)



SCALE
6-FOOT MAN

STATE
RUSSIA

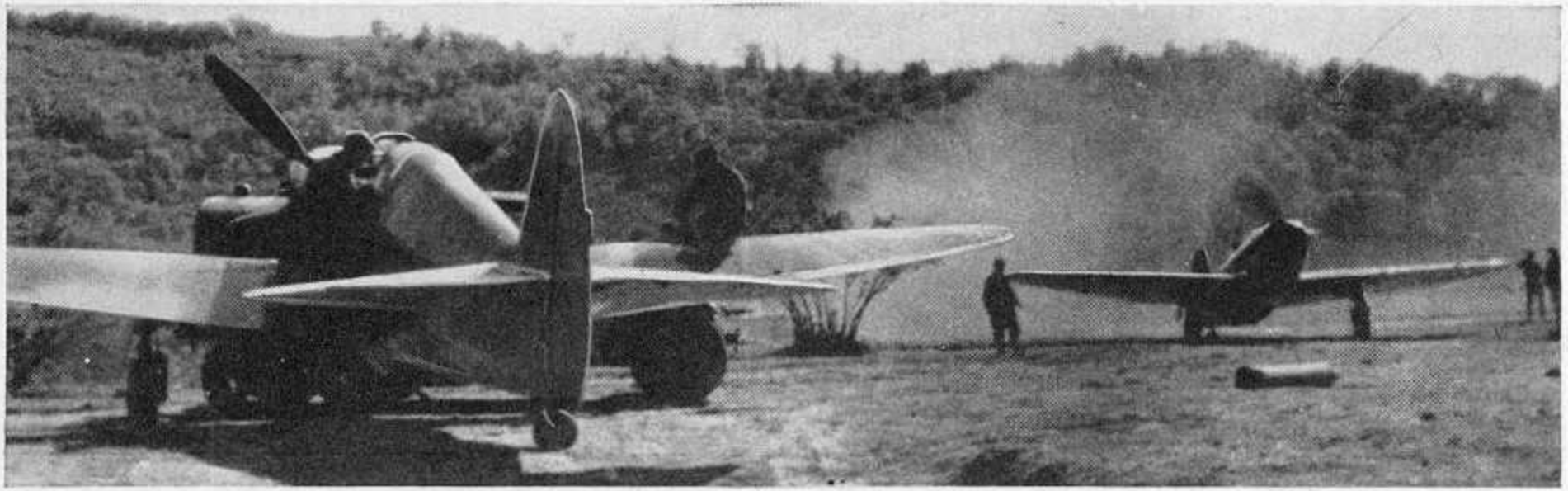


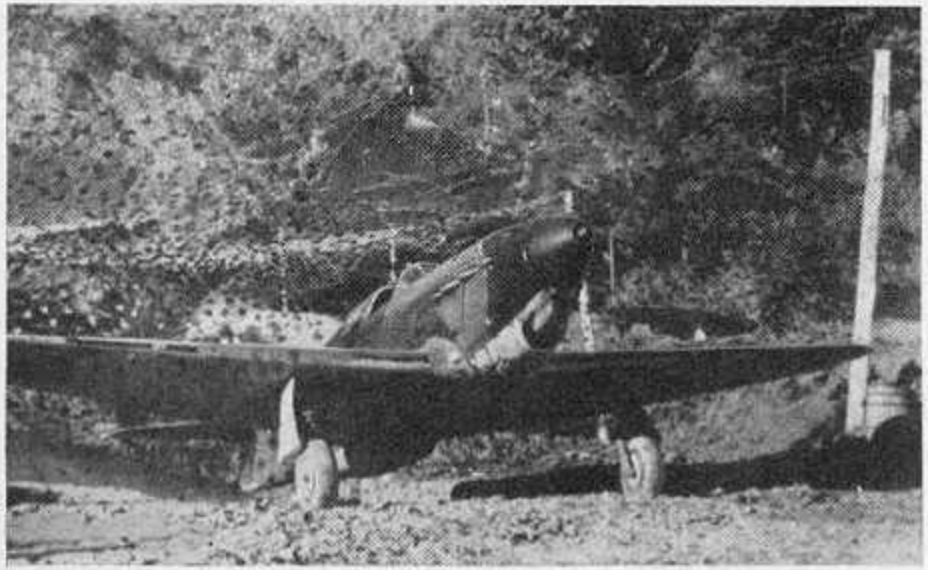
DISTINGUISHING FEATURES: Single inline engine, low-wing monoplane. Wings have nearly equal taper with large fillets. Long pointed nose with large spinner. Oil cooler shows under the nose. Radiator is placed well aft. Cockpit is centered amidships. Fin tapers forward with rounded top. Rudder is rounded. Tailplane has elliptical trailing edge and large V cut-out.

INTEREST: This airplane was designed by Alexander Yakovlev, who was also responsible for the Yak–4. It has been reported in action on the northwestern front. The rear fuselage appears to have a fabric covering. The landing gear retracts inward and is well covered by fairing plates. The appearance of the exhausts indicates that the engine is of the Hispano-Suiza type.

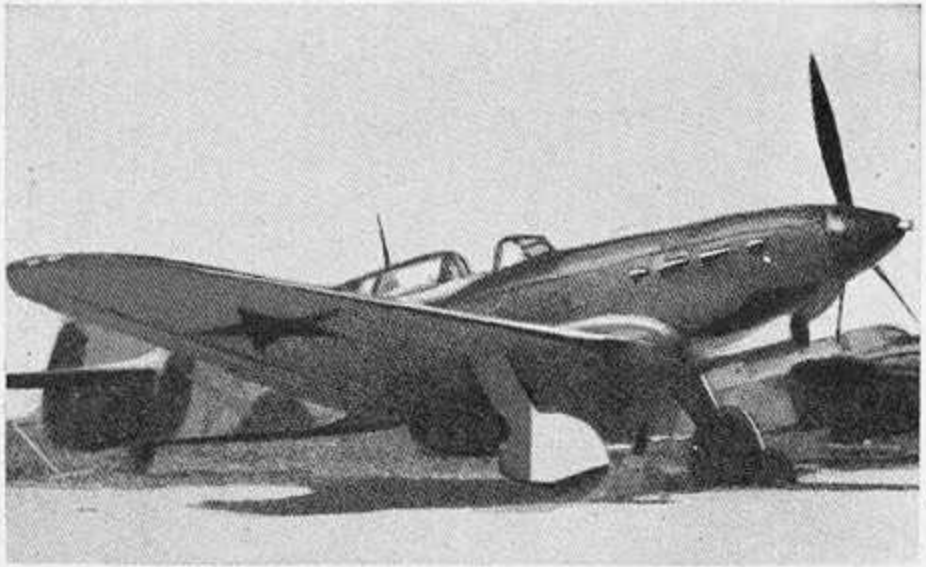
SPAN: 32 ft. 10 in.
LENGTH: 27 ft. 11 in.
MAX. SPEED: 315 m. p. h. at 14,000 ft.
SERVICE CEILING: 30,500 ft.

A





B

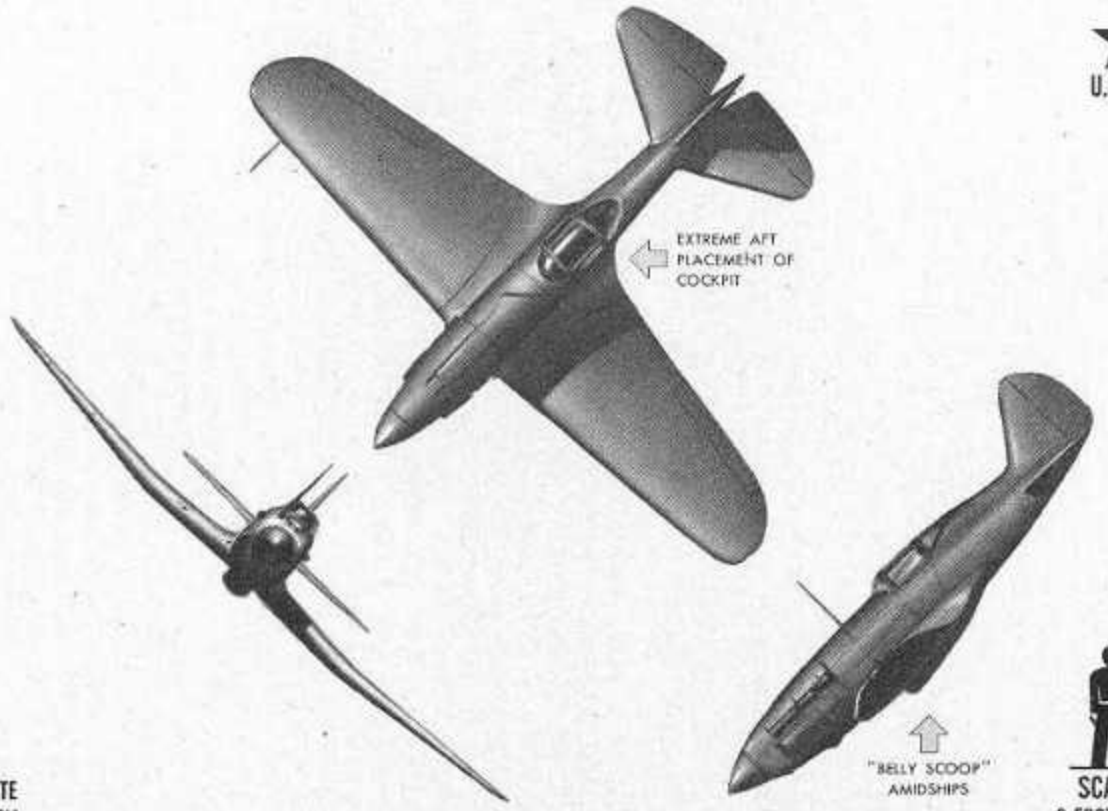


C

FIGHTER

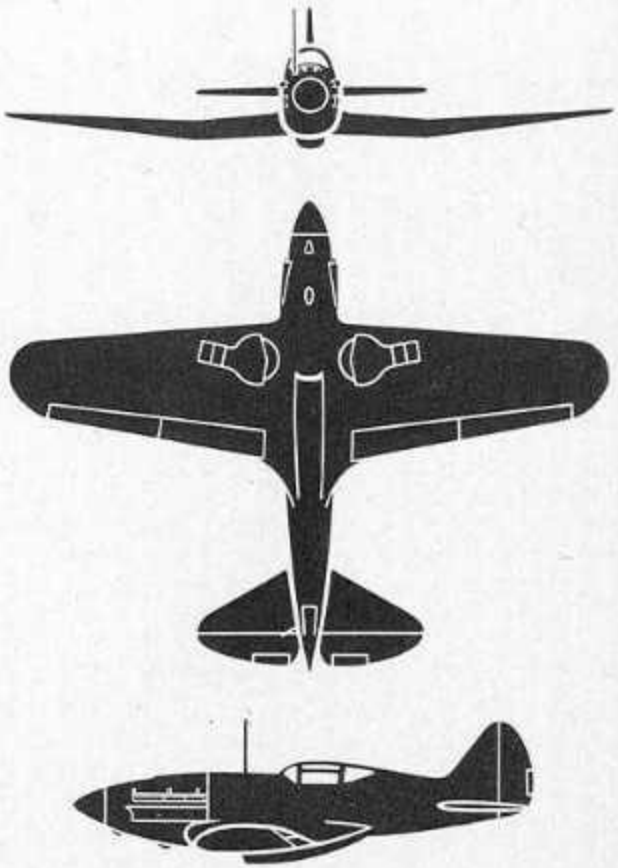
U.S.S.R.

MIG-3 (I-18)



STATE
RUSSIA

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Single inline engine, low-wing monoplane. Slight inverted gull wing with rounded tips. Leading edge has slight taper; trailing edge sharp taper. Trailing edges faired into fuselage. Long nose with large pointed spinner. Small cockpit set over trailing edge of wing. Fin and stabilizer taper well forward. Rounded trailing edge on rudder and elevators. V cut-out in center of elevators.

INTEREST: A modern liquid-cooled fighter, the Mig–3 was constructed after the start of the war and was developed largely from the I–16 ("Mosca") which had seen combat service in the Spanish Revolution. As in other Russian planes, the I–18 makes noticeable use of intermixed wood and metal construction. It is one of Russia's best fighters and has met with outstanding success in encounters with the best planes of the Luftwaffe. This fighter played a large part in holding the Germans before Moscow in 1941.

SPAN: 34 ft. 6 in.
LENGTH: 26 ft. 8 in.
APPROX. SPEED: 375 m. p. h. at 22,000 ft.
SERVICE CEILING: 34,000 ft.

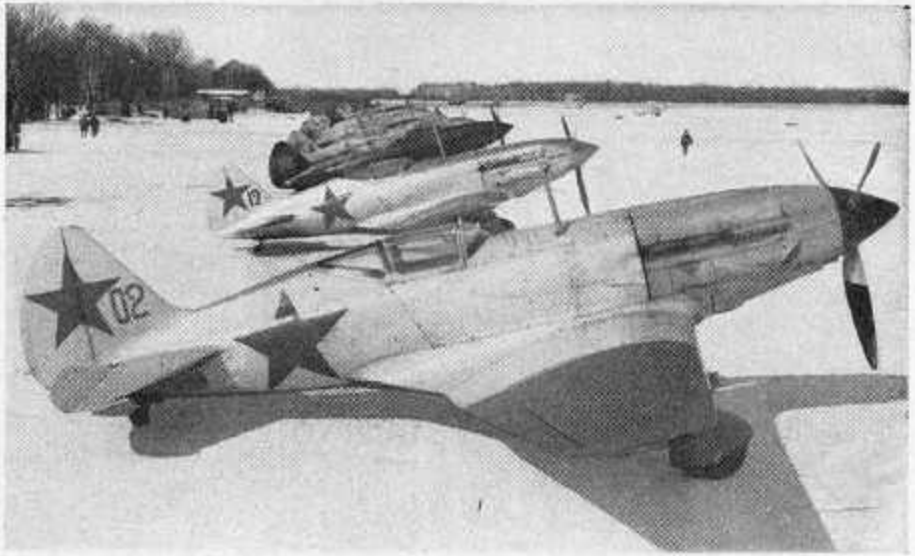
NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

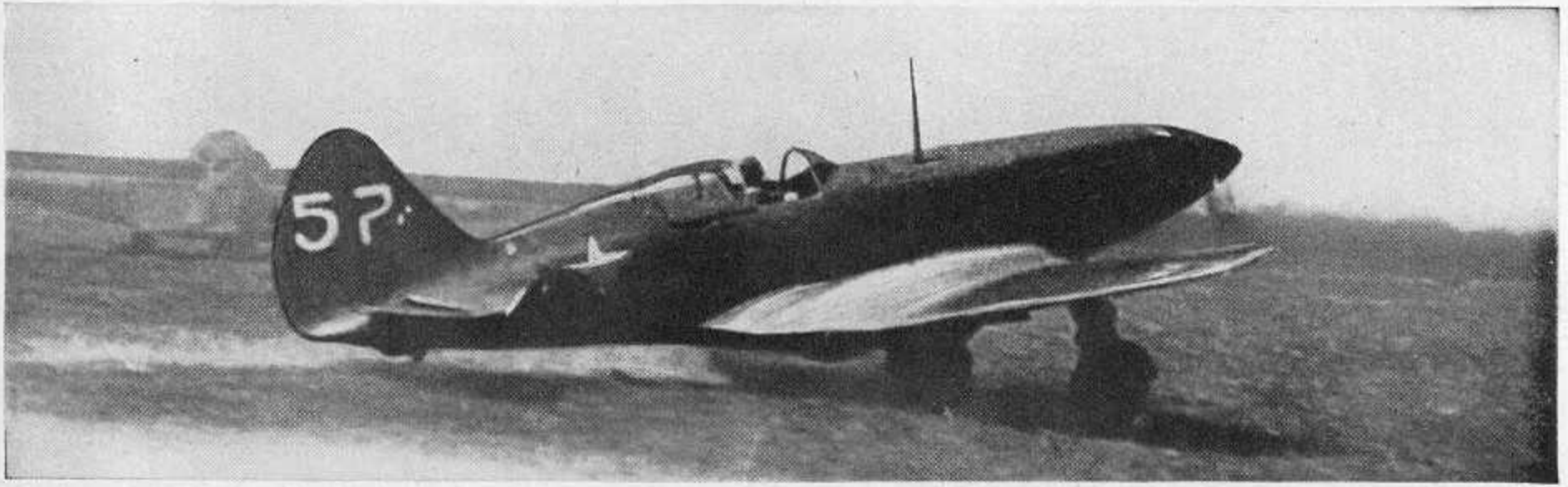
RESTRICTED

A

B



C

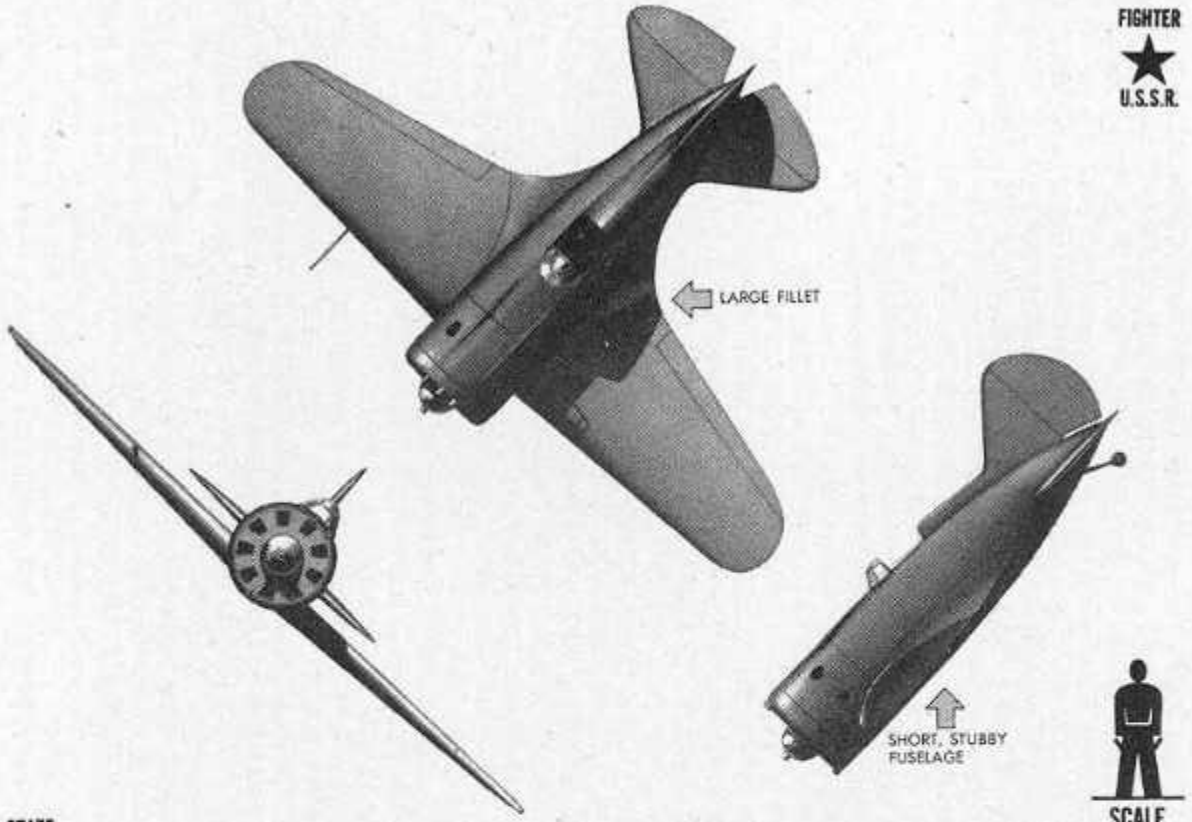


I-16; I-16C

FIGHTER

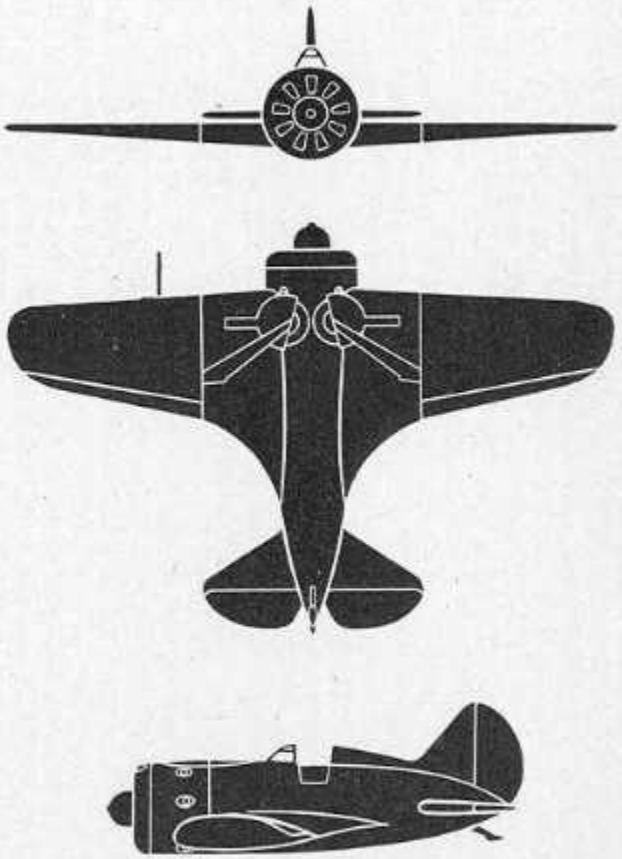
★

U.S.S.R.



STATE
RUSSIA

SCALE
6-FOOT MAN



SPAN: 29 ft. 2 in.
LENGTH: 20 ft. 4 in.
APPROX. SPEED: 300 m. p. h. at 15,000 ft.
SERVICE CEILING: 32,000 ft.

DISTINGUISHING FEATURES: Single radial engine, low-wing monoplane. Wing has straight leading edge, tapered trailing edge and rounded tips. Very large wing fillets extend well back toward tail. Fuselage very short and stubby with large cylindrical nose. Small cockpit set well back with head fairing extending to fin. Rudder has round trailing edge. Stabilizer has leading edge tapered forward. Elevators have cut-out in center.

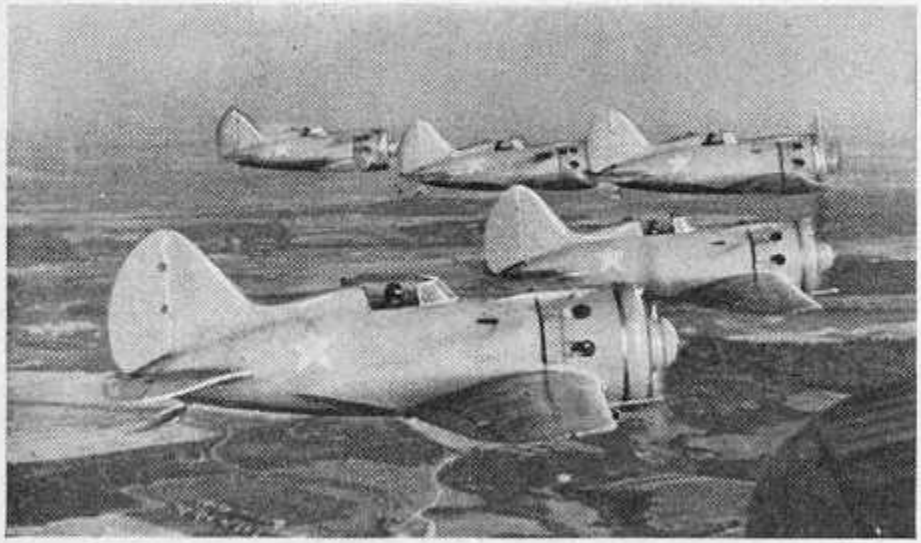
INTEREST: This monoplane received thorough testing in the Spanish Civil War. It has been handicapped in maneuverability due to high wing loading. As used in Spain, the I–16 had armor plate of 7 mm. thickness, which protected the back and head of the pilot. This plane, although obsolete, is used as a fighter and advanced trainer. The current model, the I–16C or "Super Rata," has a 1,000 hp. engine. The older I–16 is sometimes called the "Rata" or "Mosca."

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

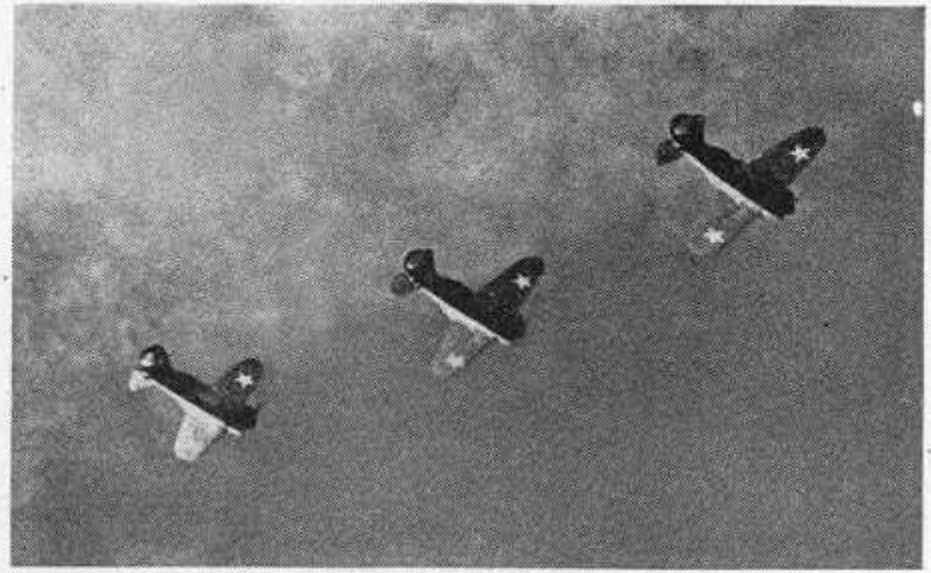
SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

RESTRICTED

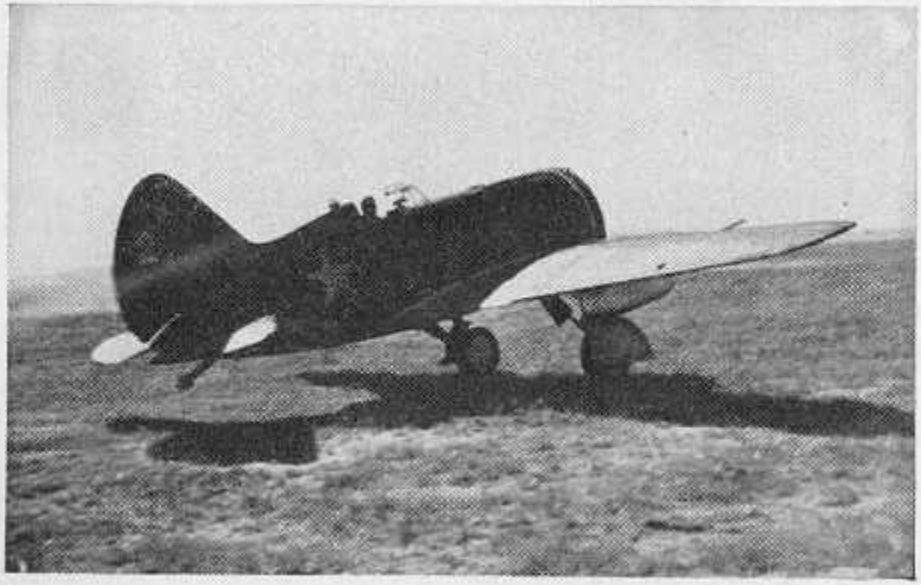
A



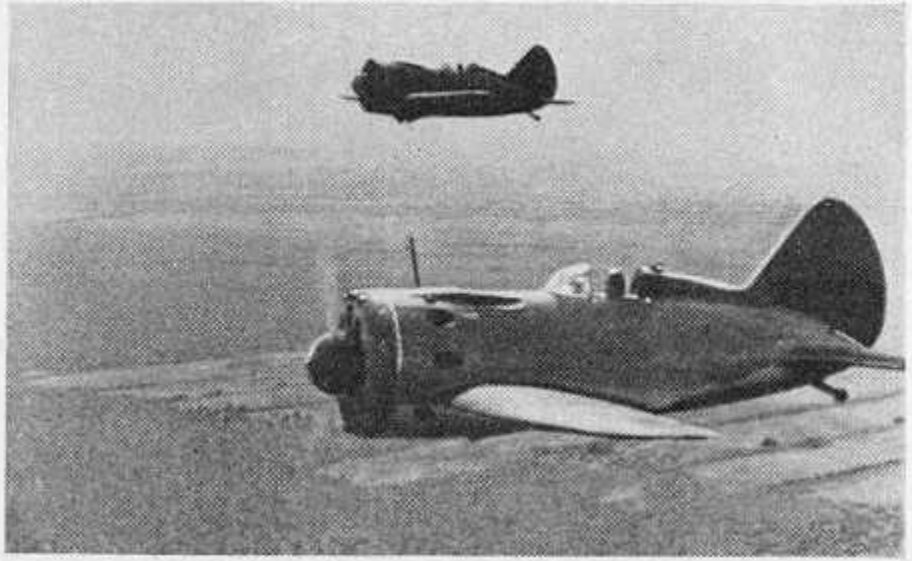
C



B



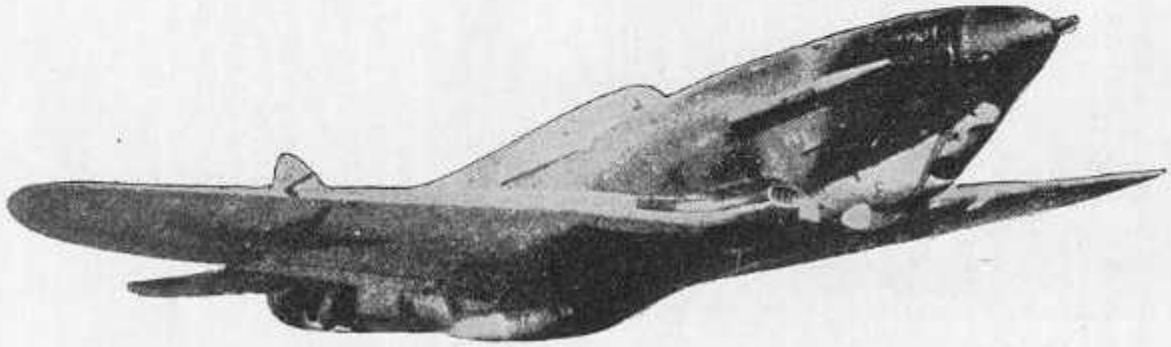
D

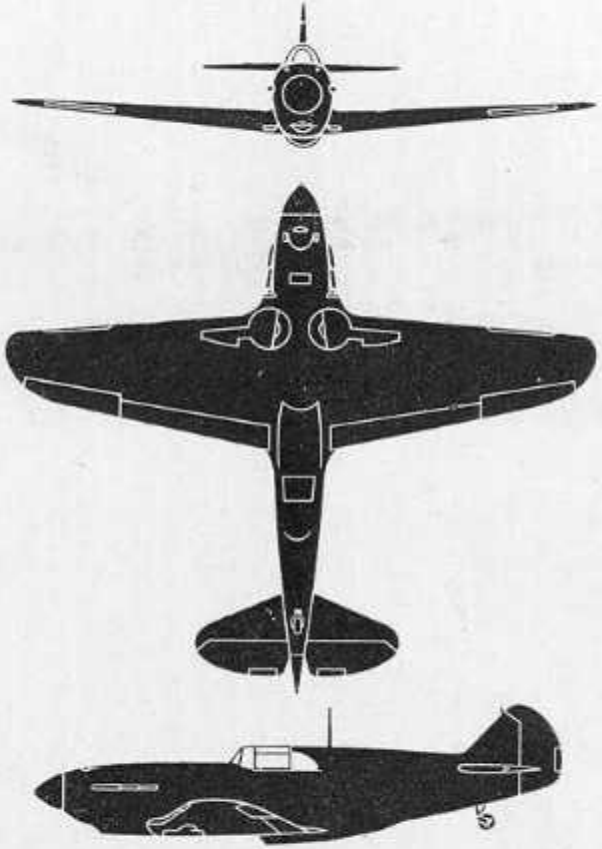


FIGHTER

U.S.S.R.

LAGG 3





STATE
RUSSIA

DISTINGUISHING FEATURES: Single-engine, in-line, low-wing monoplane with single fin and rudder. Large spinner fits snugly into cowling. Cockpit set far back. Fin and rudder set high with taper to fin and rudder curved. Large scoop under mid-section fuselage. Fuselage and tail sweep up high. Wings have a slight taper to leading edge and greater taper to trailing edge; tips are rounded. Tailplane has taper to leading edge and curved trailing edge. Fuselage oval-shaped; wings have slight dihedral and tailplane set high.

INTEREST: Intended for low altitude fighting and ground attack.

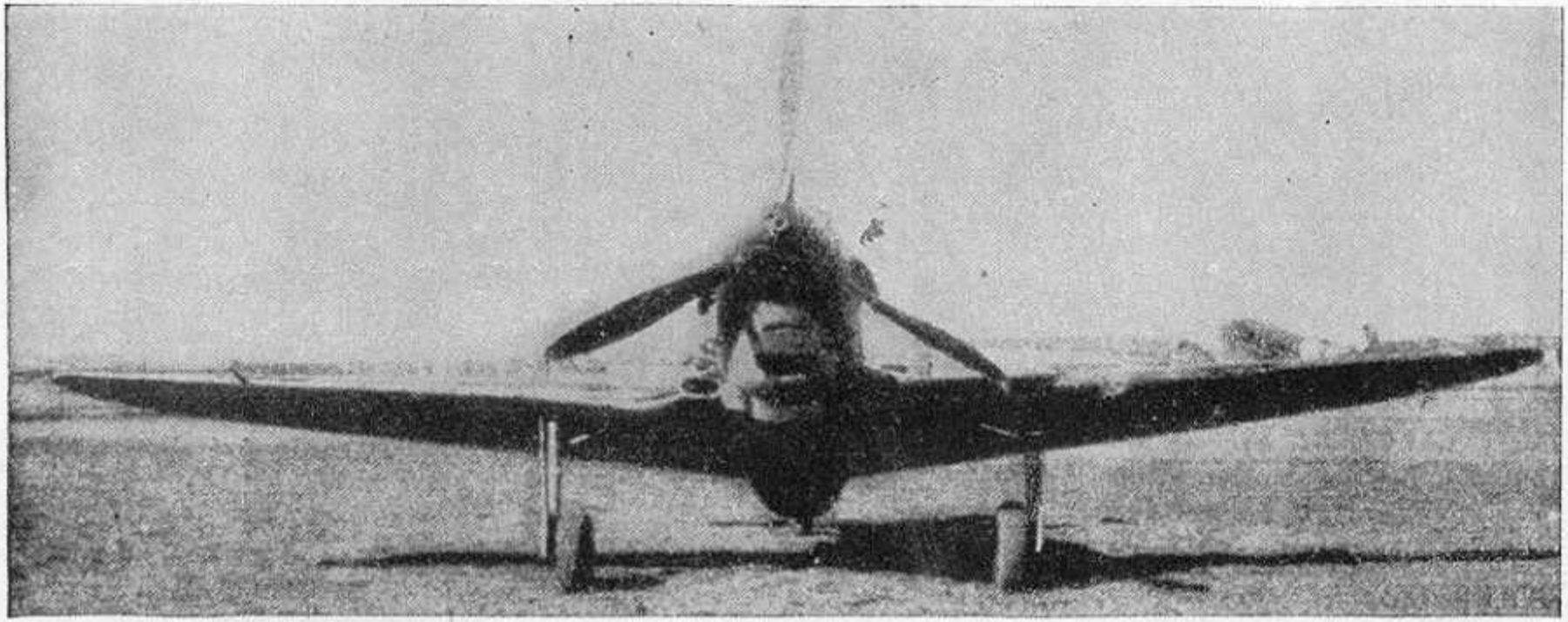
SPAN: 32 ft. 2 in. **SERVICE CEILING:**
LENGTH: 28 ft. 9 in.
MAX. SPEED: Estimated 320 m.p.h. at 14,200 ft.

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

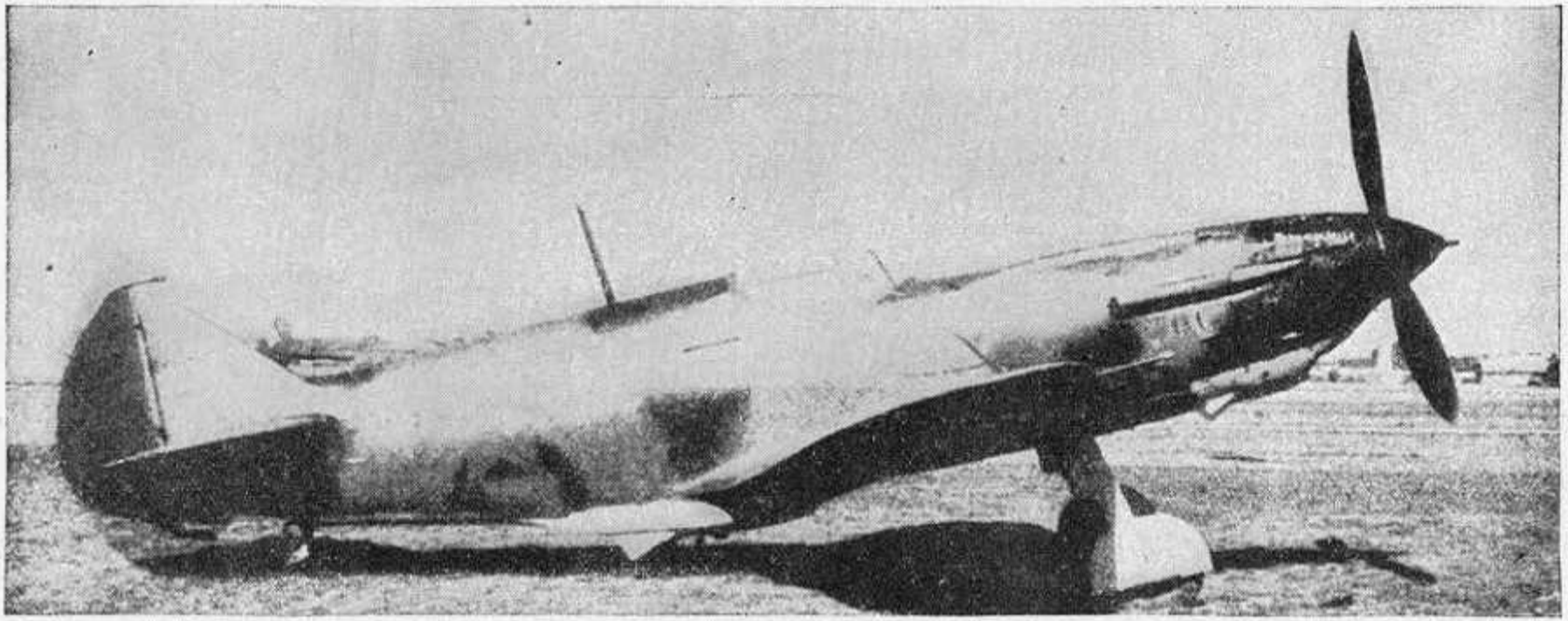
SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A



B

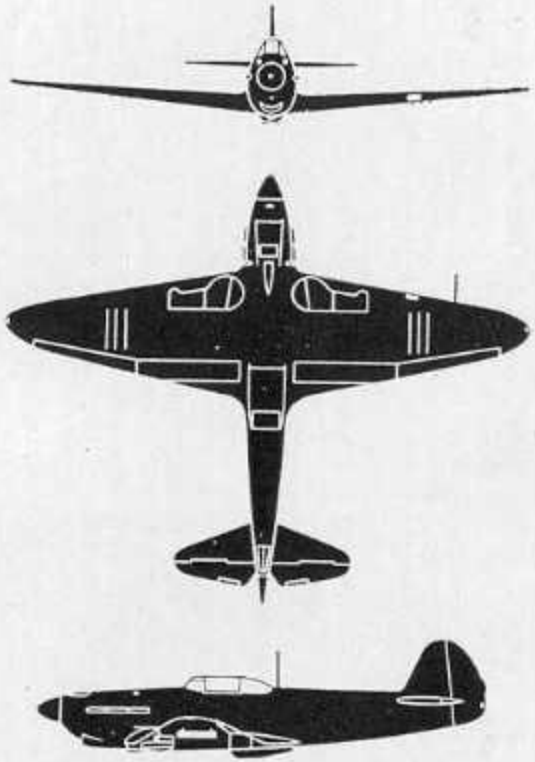


FIGHTER

★

U.S.S.R.

YAK 9



STATE
RUSSIA

DISTINGUISHING FEATURES: Single in-line engine, low-wing monoplane with single fin and rudder. Large solid spinner gives nose pointed shape. Small blister cockpit set far back breaks upper fuselage line. Propeller shaft high. Vertical tail surface rounded. Leading and trailing edges taper sharply to a point. Chord is wide. Fuselage ends in sharp point. Leading edge of stabilizer tapers, trailing edge curved with bite. Fuselage oval, wings only slightly dihedral, stabilizer set high.

INTEREST: Developed from Yak 1—considered one of best and newest fighters.

SPAN: 32 ft. 9 in.
LENGTH: 27 ft. 10 in.
MAX. SPEED:

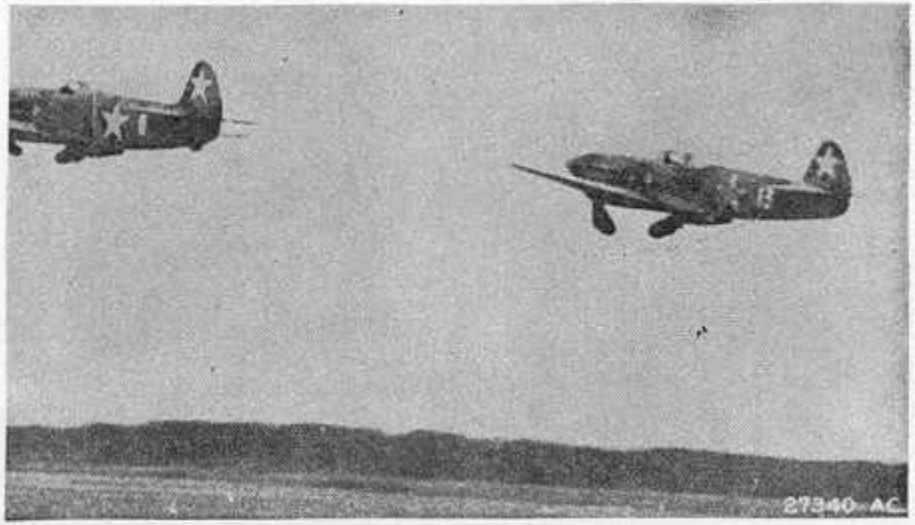
SERVICE CEILING:

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A



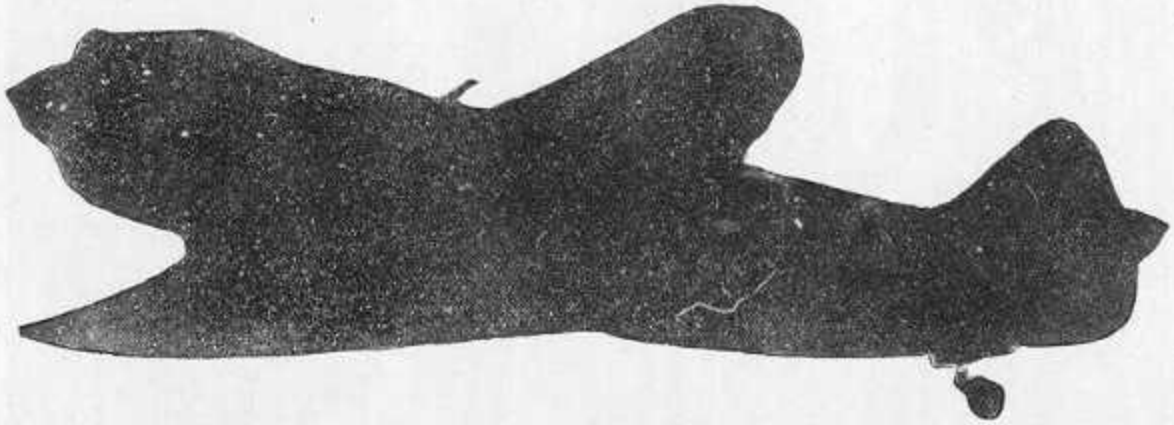
B

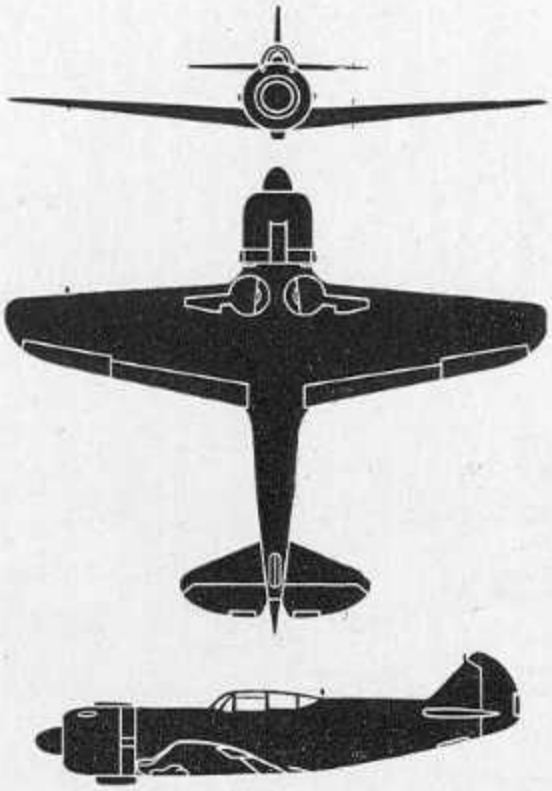
C

FIGHTER

U.S.S.R.

LA 5





STATE
RUSSIA

DISTINGUISHING FEATURES: Single radial engine, low-wing monoplane with single fin and rudder. Large spinner fits into streamlined cowling. Well-faired cockpit is set well back and breaks otherwise straight dorsal side of fuselage. Fuselage and tail swept up similar to Lagg 3. Greater taper to trailing edge of wing than to leading edge with wing tips round. Fuselage is circular. Wings are dihedral from root. Horizontal stabilizer set high.

INTEREST: Radial engine plane as compared with in-line engine of Lagg 3. Considered best Russian fighter.

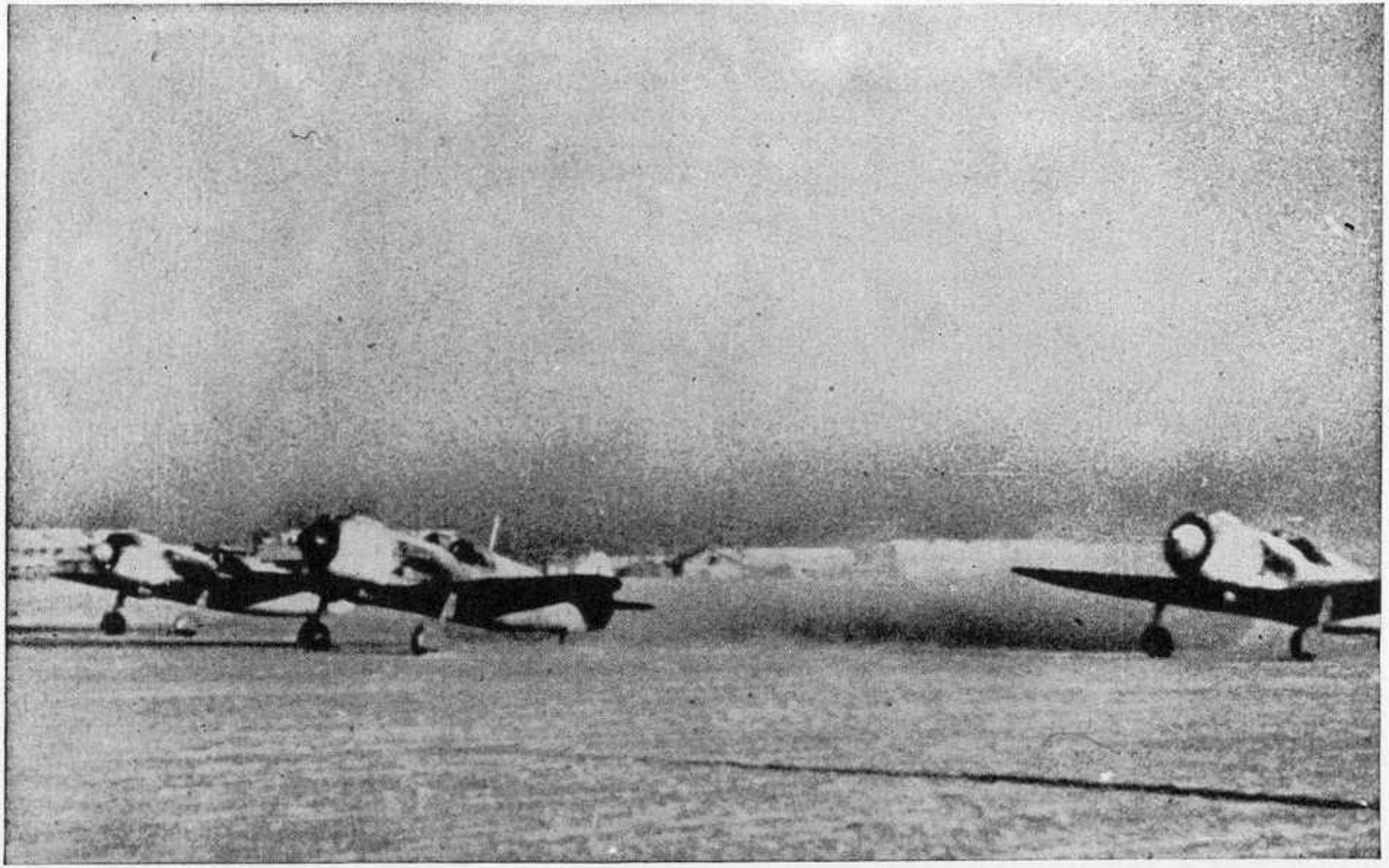
SPAN: 32 ft. 2 in.
LENGTH: 28 ft. 7 in.
MAX. SPEED:
SERVICE CEILING:

AUGUST, 1944
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT TWO [WAR DEPARTMENT FM 30–30
NAVY DEPARTMENT BUAER 3

RESTRICTED

A

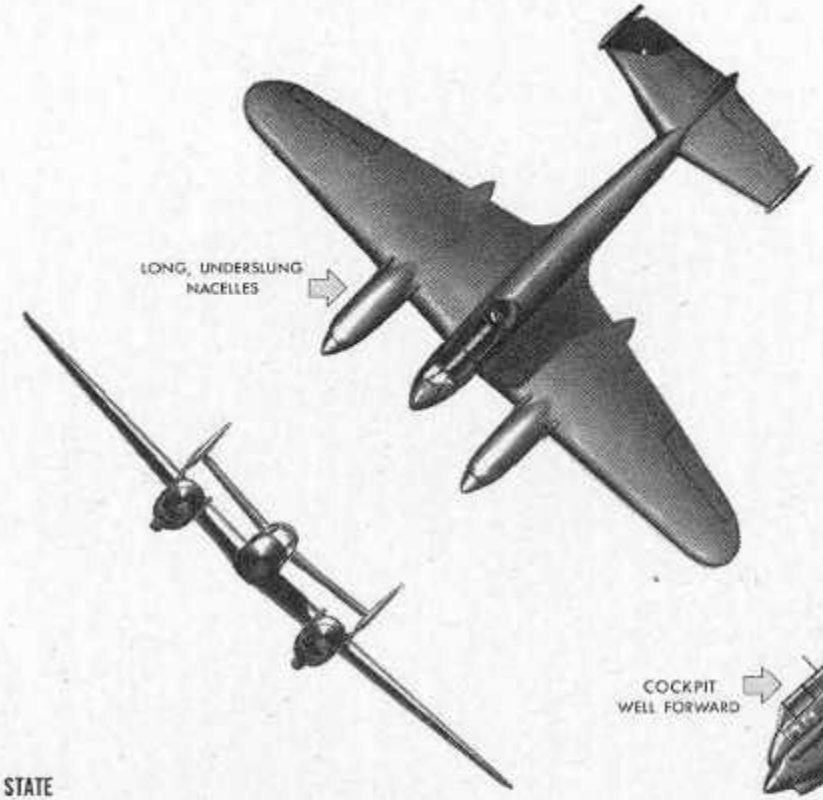


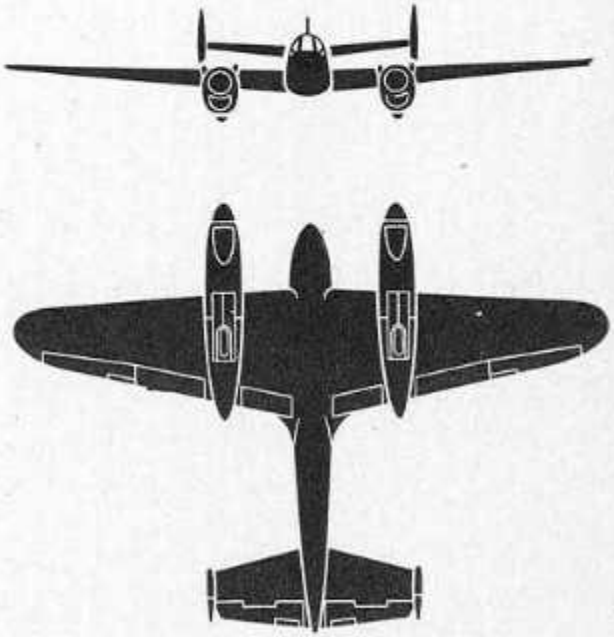
LIGHT BOMBER

★

U.S.S.R.

YAK-4





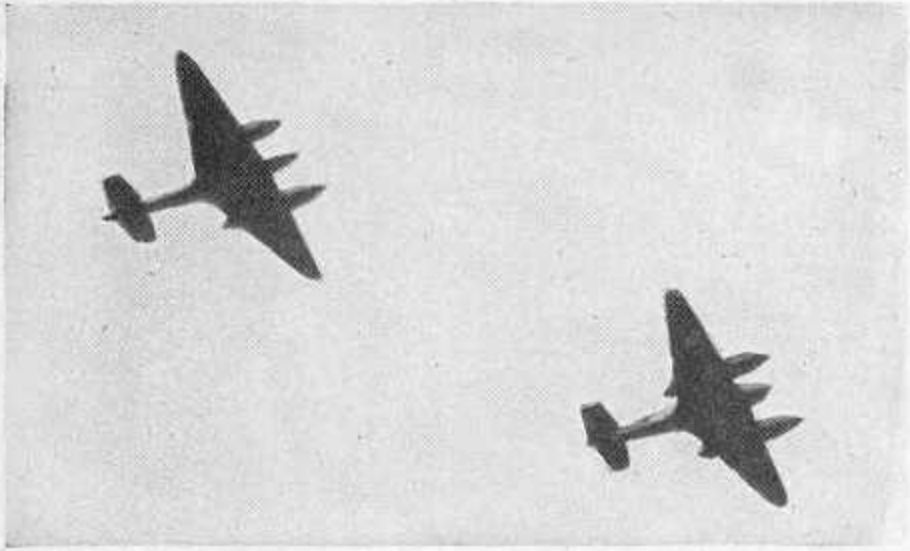
STATE
RUSSIA

SCALE
6-FOOT MAN

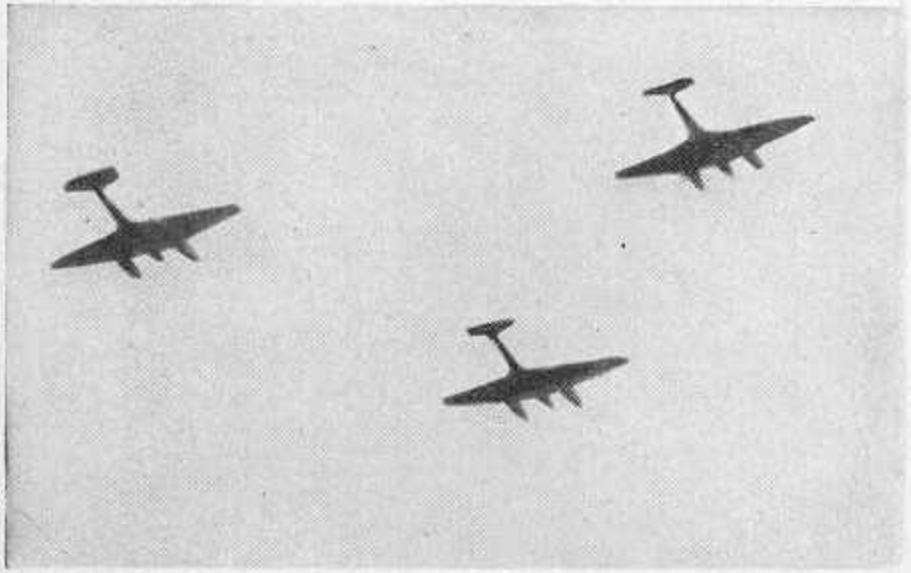
DISTINGUISHING FEATURES: Twin inline engine, low-wing monoplane. Slight taper to leading edge of wing. Trailing edge highly tapered, fairs into fuselage. Engine nacelles protrude beyond trailing edge of wing and beyond nose of fuselage. Protruding cockpit canopy well forward. Twin outboard fin and rudders have distorted circular shape.

INTEREST: One of the Russian high-speed bombers, the Yak–4 has contributed much to the work of the Red Air Force. The construction of the plane is of mixed wood and metal. It carries a crew of two in a well-glazed cockpit. The armament is said to consist of two 20-mm. and four 7.6-mm. machine guns, in addition to a 2,200-lb. bomb load. A semi-retractable ski landing gear may be installed when necessary.

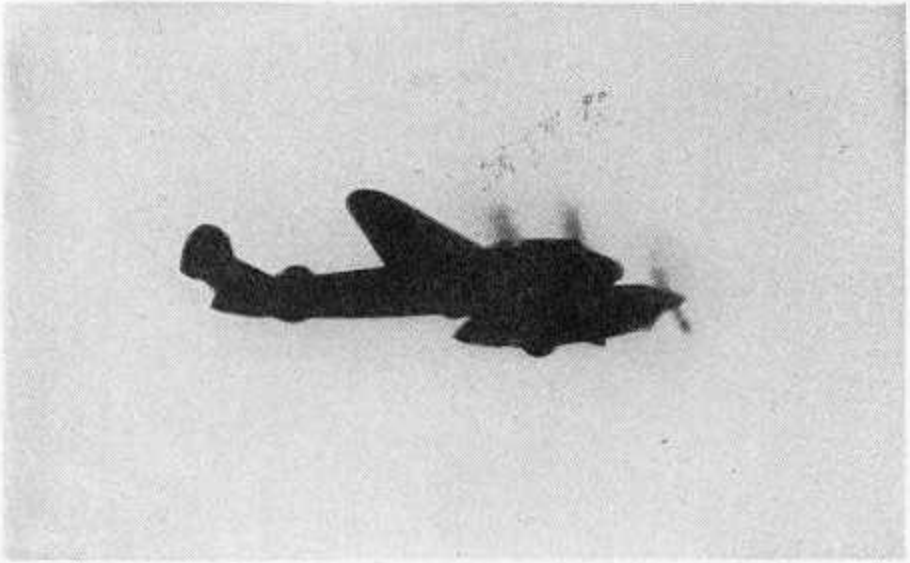
SPAN: 45 ft. 11 in.
LENGTH: 32 ft. 10 in.
MAX. SPEED: 320 m. p. h. at 14,000 ft.
SERVICE CEILING: 27,500 ft.



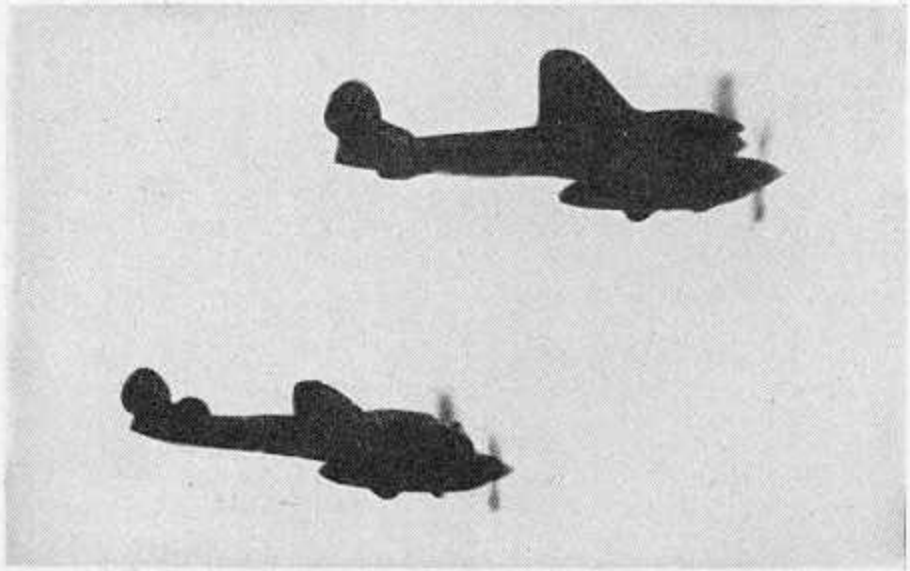
A



B



C



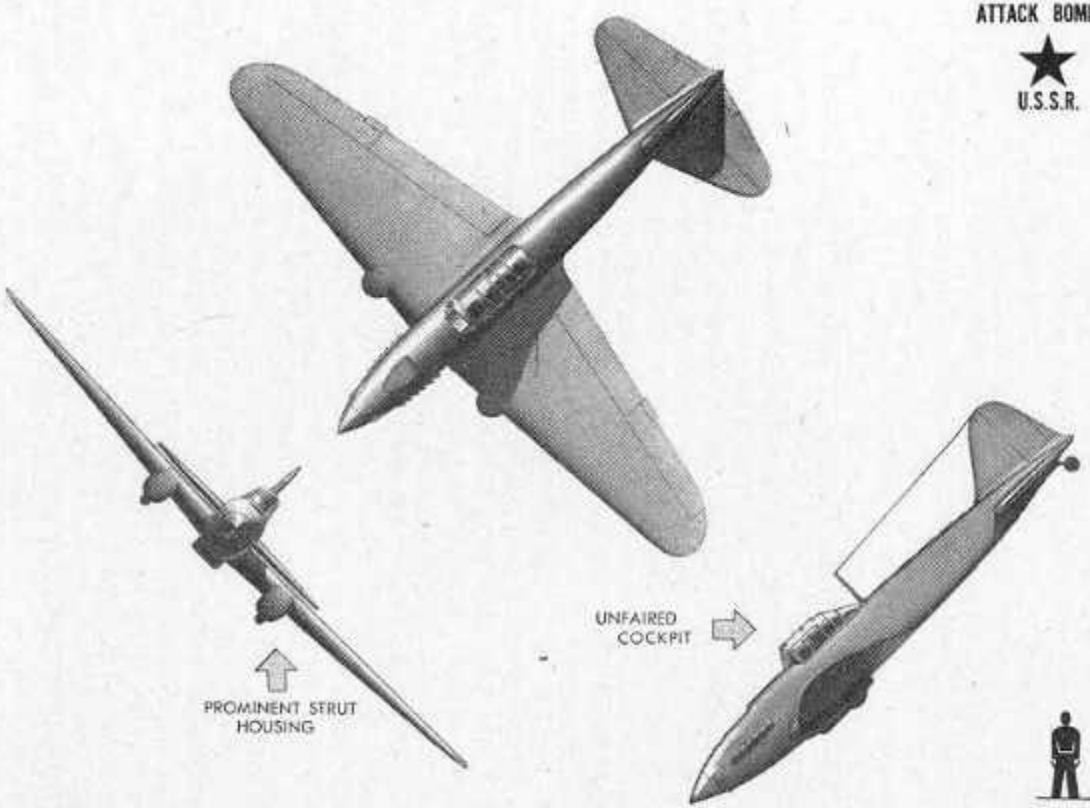
D

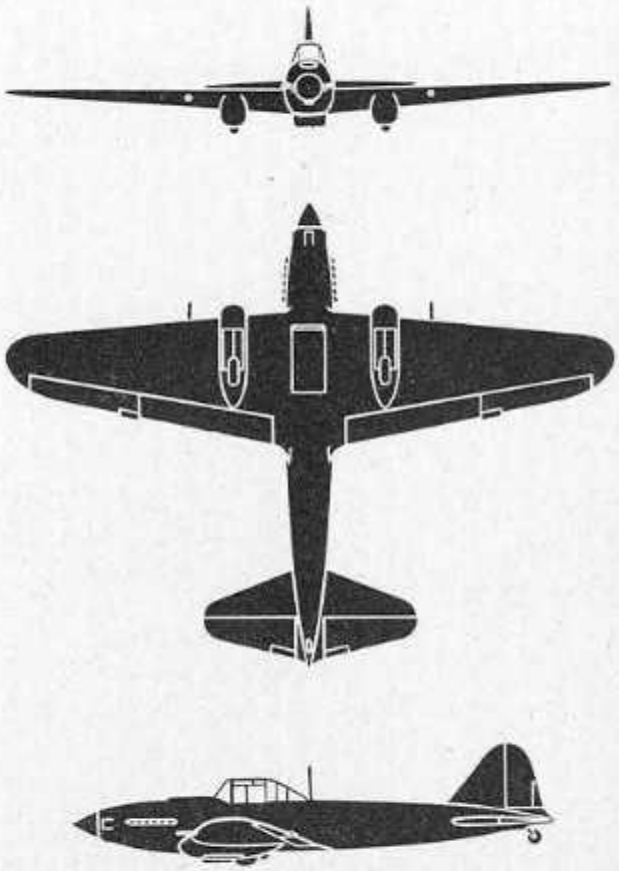
ATTACK BOMBER

★

U.S.S.R.

IL-3; IL-2





SCALE
6-FOOT MAN

STATE
RUSSIA

DISTINGUISHING FEATURES: Single inline engine, low-wing monoplane. Wing has pronounced taper and trailing edge fairs into fuselage. Prominent fairings for retractable landing gear beneath wings. Fuselage has rather long nose with pointed spinner and radiator beneath wing. Prominent, unfaired cockpit canopy. Fin and rudder have rounded top. Diamond-shaped tailplane with round tips.

INTEREST: The Stormovik is said to be so heavily armored for strafing work that light cannon fire has small effect on its sides. It is in its element when flying low, attacking German tank and mechanized columns. The engine cowling is composed of steel plate 6- to 8-mm. in thickness. Even parts of the plane which are the least vulnerable have protecting armor of 4 mm. thickness. With heavy armament consisting of two 20- or 37-mm. cannon, plus machine guns, the plane is designed especially to be a "flying antitank battery."

SPAN: 47 ft. 11 in.
LENGTH: 38 ft.
SERVICE CEILING: 28,000 ft.
MAX. SPEED: 275 m. p. h. at 8,000 ft.

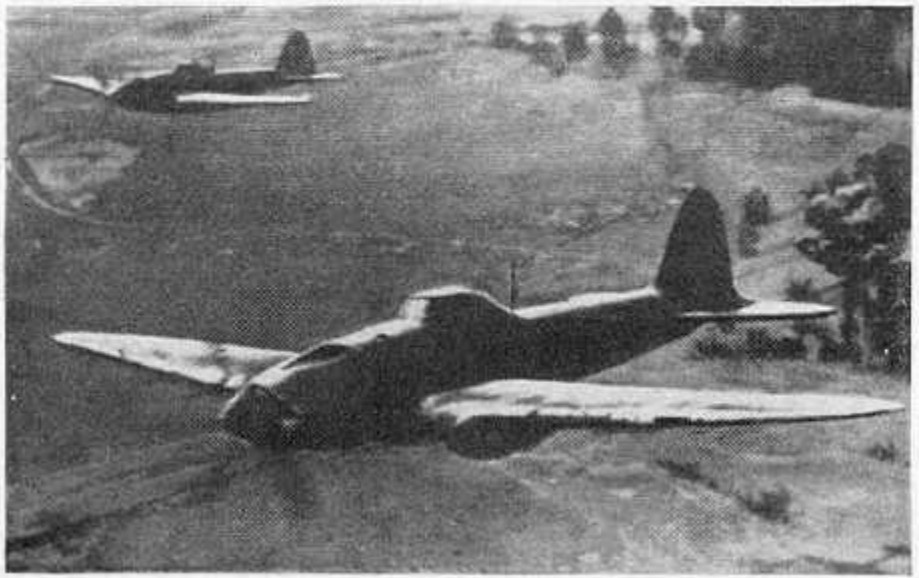
RESTRICTED

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

A

B



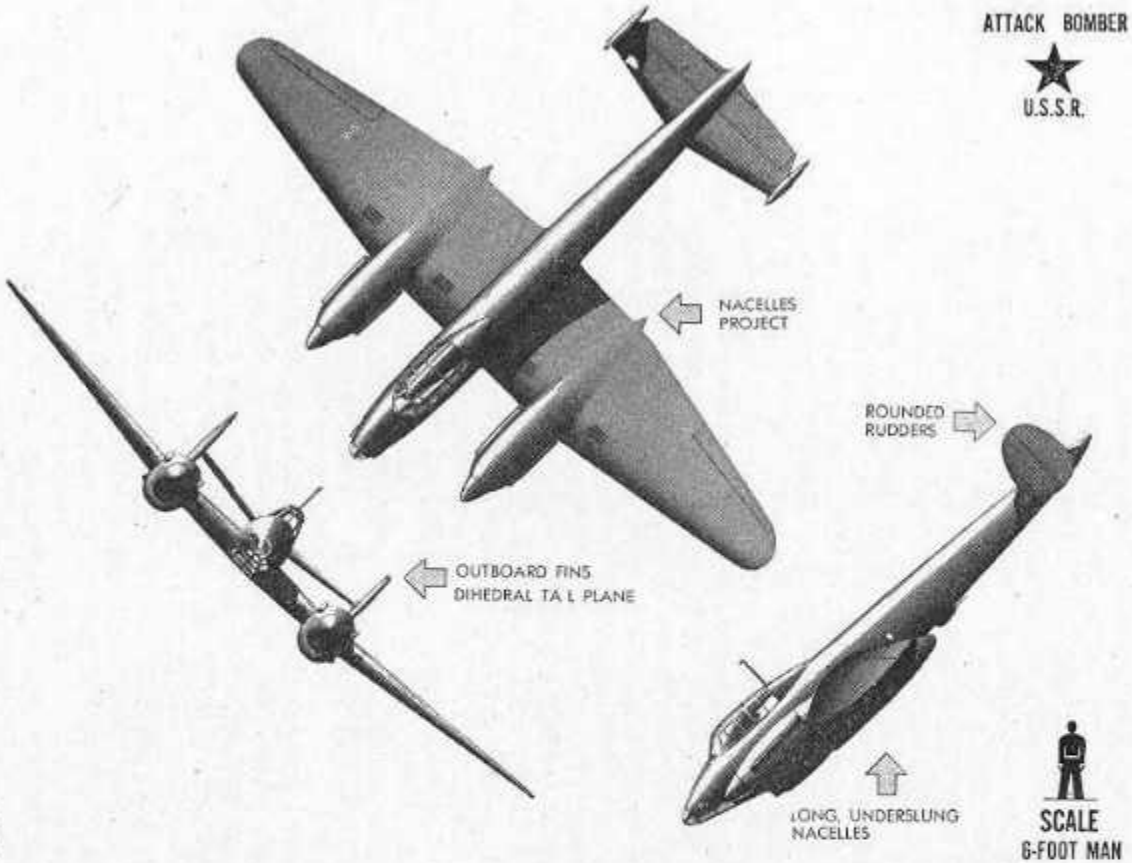
C

D

ATTACK BOMBER

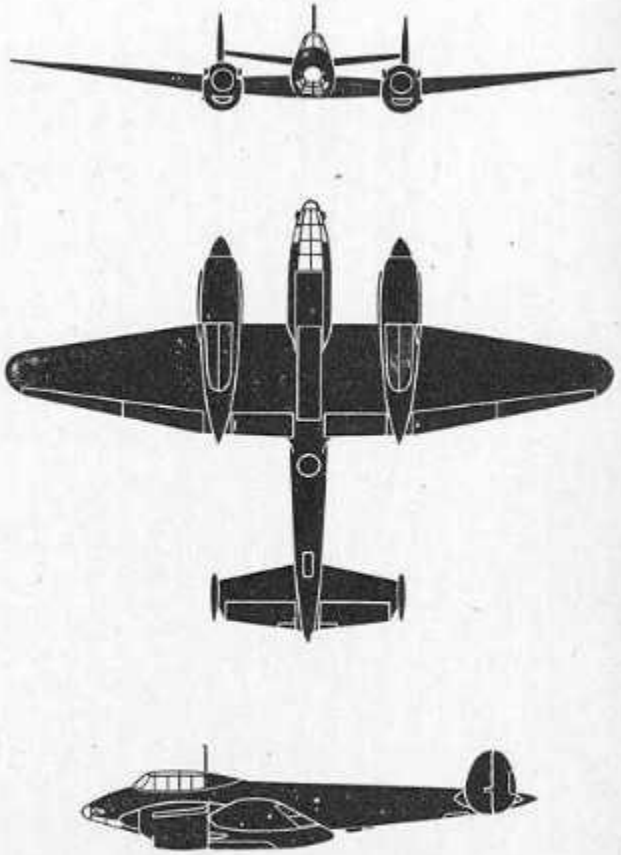
U.S.S.R.

PE-2; PE-2B



STATE
RUSSIA

SCALE
6-FOOT MAN



SPAN: 56 ft. 1 in.
LENGTH: 41 ft. 5 in.
APPROX. SPEED: over 300 m. p. h.
SERVICE CEILING: 32,000 ft.

DISTINGUISHING FEATURES: Twin inline engine, low-wing monoplane. Wing has rectangular center section. Leading edge and trailing edge of outer section equally tapered. Curved tips. Engine nacelles are underslung and project beyond trailing edge. Fuselage has graceful slender taper. Small raised cockpit canopy. Warped oval-shaped fins and rudders mounted outboard on stabilizer which has pronounced dihedral.

INTEREST: The 16th German Army at Starya will remember this plane, which was used to bomb their airfields. The PE–2, a light bomber, has often met German fighters in hand-to-hand combat. Originally designed as a dive bomber, this fast "twin-tail" has performed many kinds of offensive and defensive actions. The fighter version of this plane has no bombardier's windows under the nose and is known as the PE–2B or PE–3.

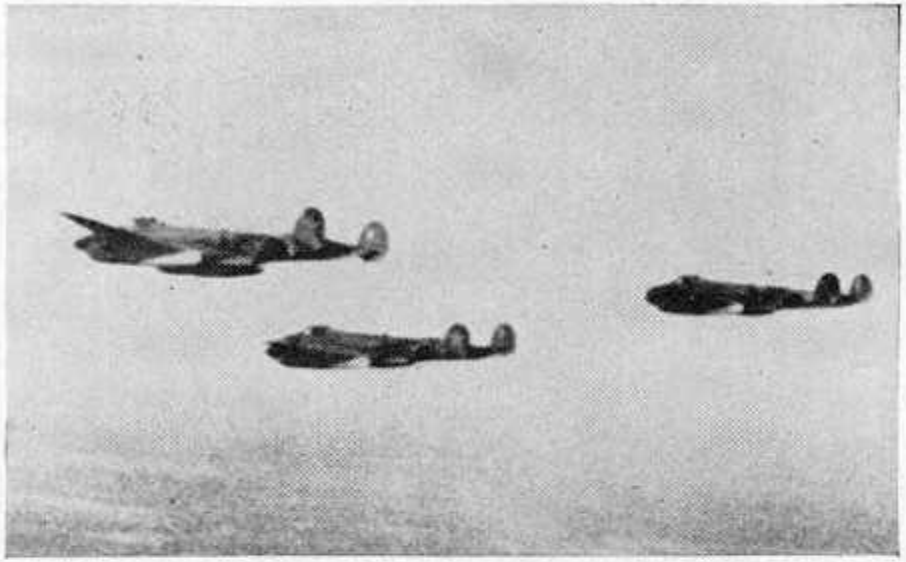
RESTRICTED

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

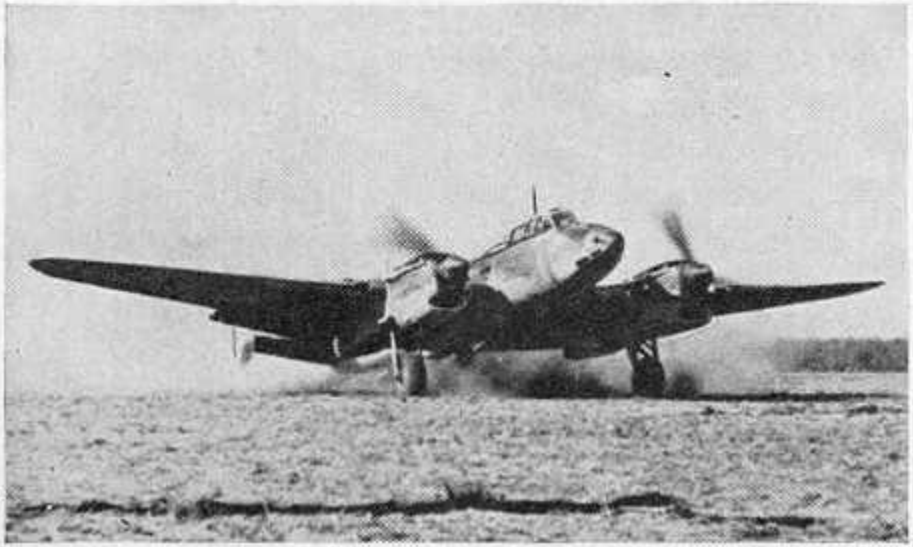
SUPPLEMENT ONE | WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

A

C



B

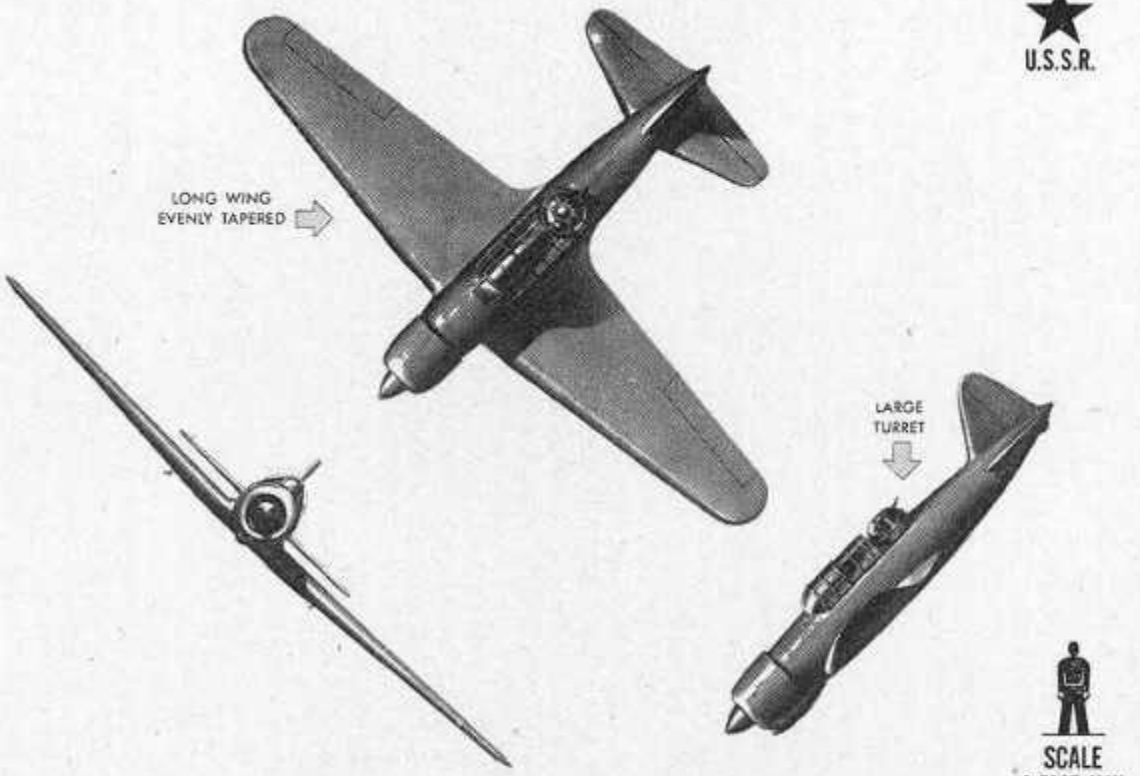


D

ATTACK BOMBER

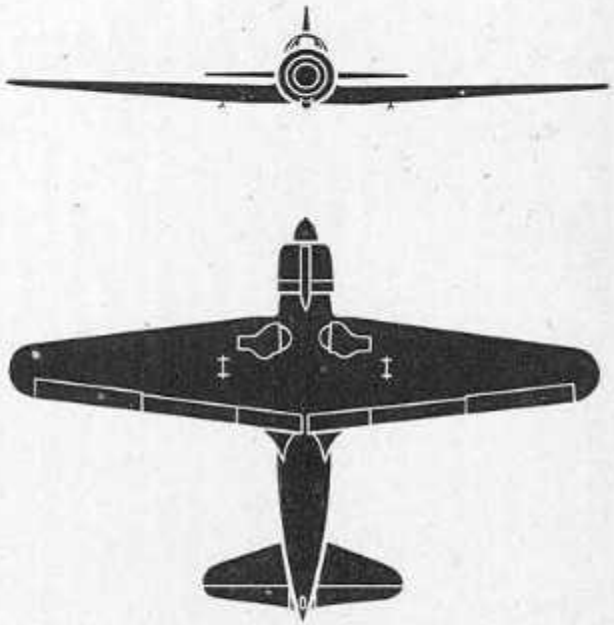
U.S.S.R.

SU-2



STATE
RUSSIA

SCALE
6-FOOT MAN



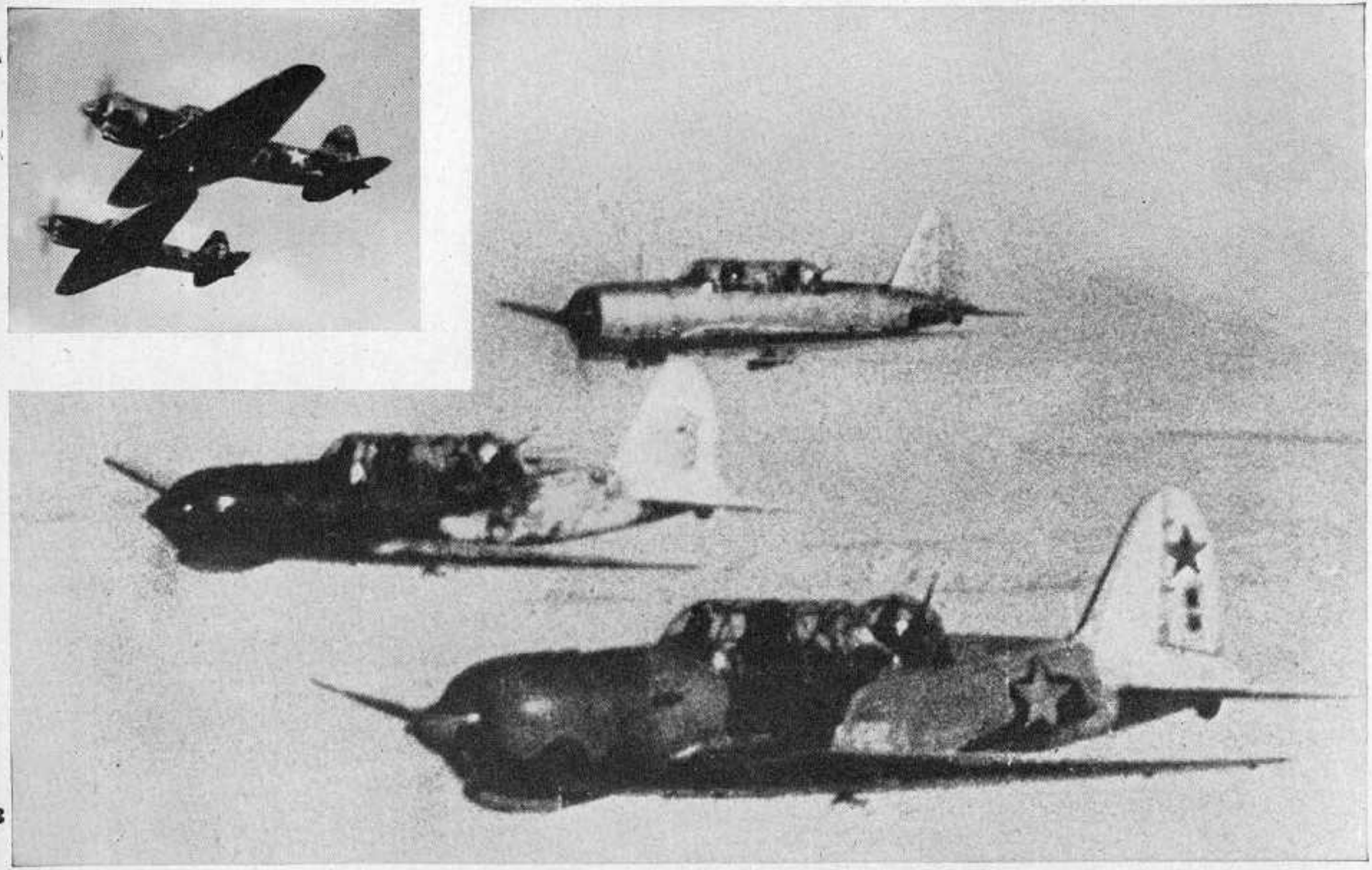
SPAN: 47 ft. 2 in.
LENGTH: 31 ft. 10 in.
MAX. SPEED: 300 m. p. h. at 21,000 ft.
SERVICE CEILING: 33,000 ft.

DISTINGUISHING FEATURES: Single radial engine low-wing monoplane. Wings have very little dihedral, equal taper, and rounded tips. Large round nose with prominent spinner. Fuselage has a long transparent canopy with a turret at the rear. Tapered tail surfaces with rounded tips.

INTEREST: The SU–2 is a two-seater general purpose monoplane. Its general appearance is similar to the Brewster Bermuda and Curtiss Helldiver. German sources state that this plane can be used as a four-gun single-seater. The single gun turret is similar to that used on the DB–3 and has an ingenious hinged cupola, half of which opens as an exit.

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

RESTRICTED



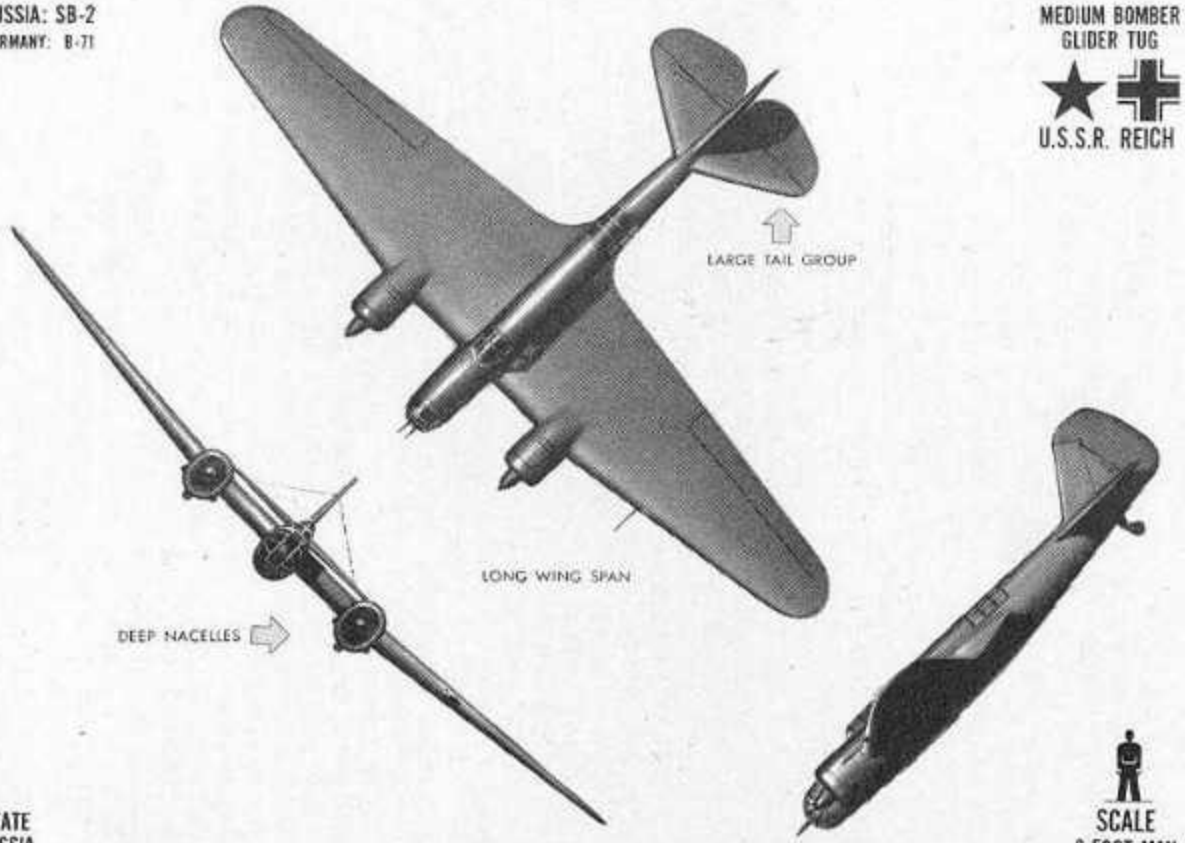
A

B

RUSSIA: SB-2
GERMANY: B-71

MEDIUM BOMBER
GLIDER TUG

U.S.S.R. REICH



STATE
RUSSIA

SCALE
6-FOOT MAN

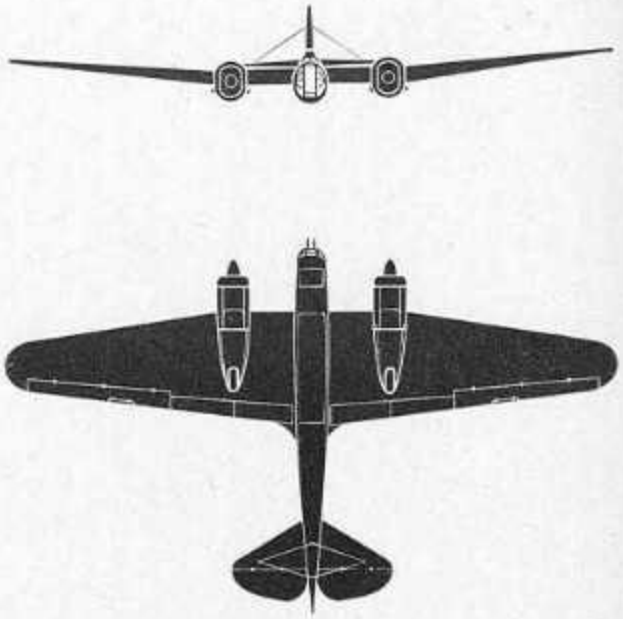
DISTINGUISHING FEATURES: Twin-engine, mid-wing monoplane. Oval-shaped engines. Leading edge of unusually long wing has straight center section and tapered outer sections. Trailing edge tapered with large fillets at fuselage. Round tips. Fuselage has rounded nose. Large fin tapers forward. Rounded rudder. Tailplane has rounded elevators with V cut-out. Leading edge of tailplane tapers forward.

INTEREST: A Soviet bomber of moderate size used in the Spanish Civil War and the Russo-Finnish campaign. Front twin-gun turret has slots for elevation and a limited traverse. Early models had a dorsal gun cockpit with sliding cover. Later models fitted with turret. Semi-retractable ventral gun position aft of rear cockpit. Engines are 860 hp. liquid-cooled V type with automobile-style radiators. Some of these planes, produced in Czechoslovakia, were seized by the Germans and used as glider tugs. German designation is B-71.

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

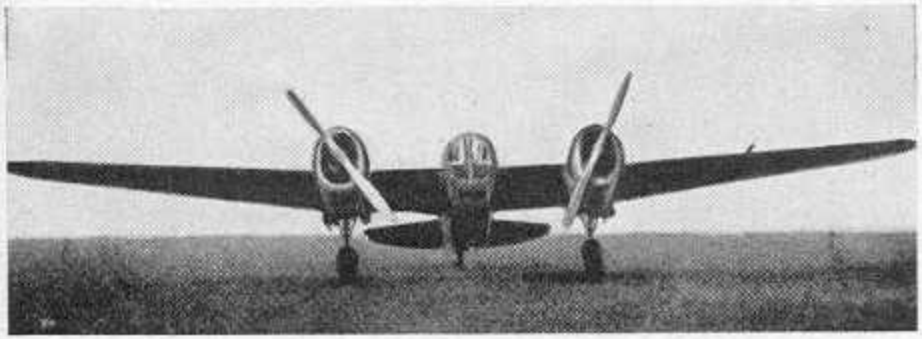
SB-2



SPAN: 66 ft. 11 in.
LENGTH: 41 ft.
MAX. SPEED: 250 m. p. h. at 15,000 ft.
SERVICE CEILING: 27,000 ft.

RESTRICTED

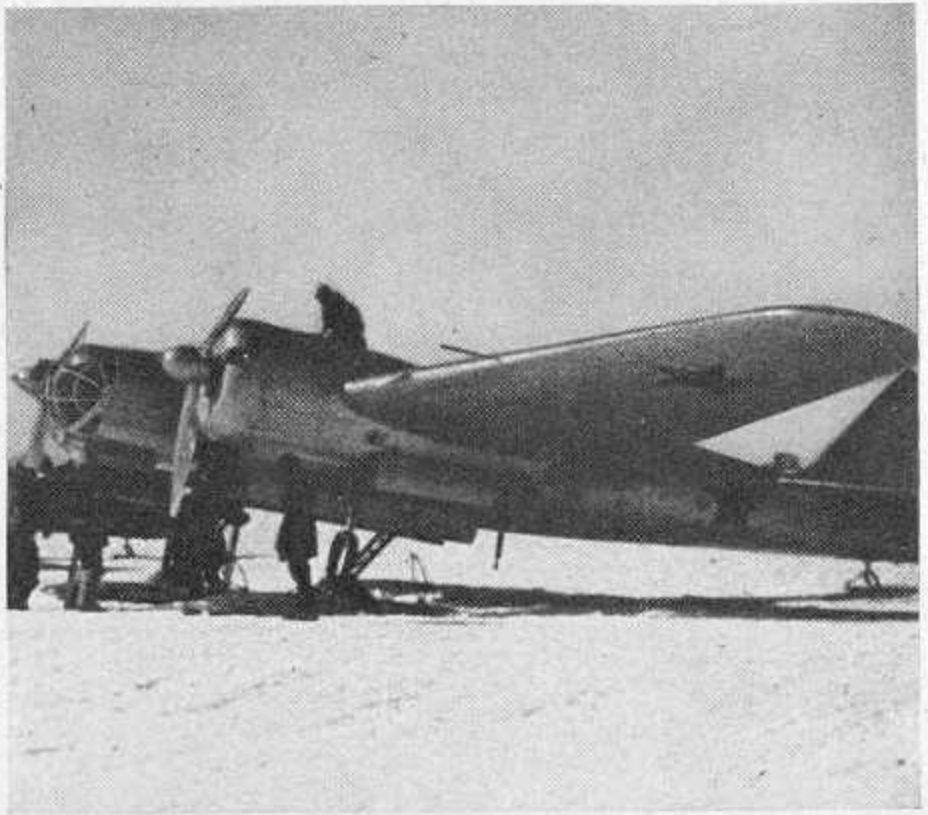
A



C

B

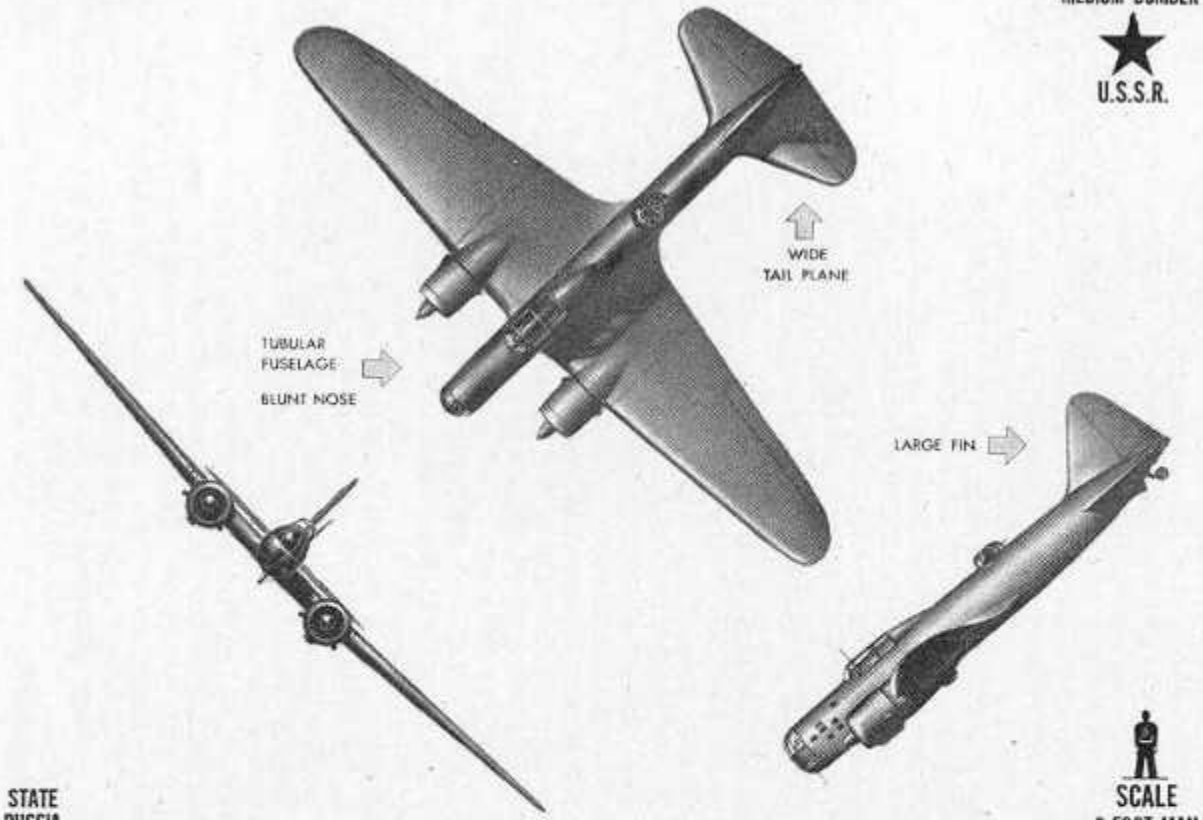
D

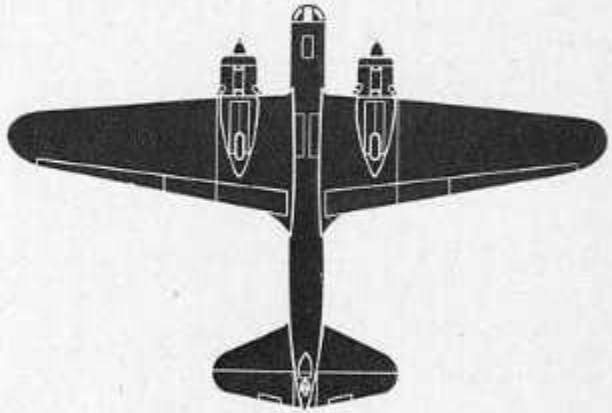


MEDIUM BOMBER

U.S.S.R.

DB-3





STATE
RUSSIA

SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Twin radial engine, low-wing monoplane. Wings have equal taper with rounded tips. Round protruding nose. Top turret is centered between cabin canopy and fin. Large wing root fillets. Triangular fin and rudder with rounded top. Tailplane has more taper on leading edge and rounded tips.

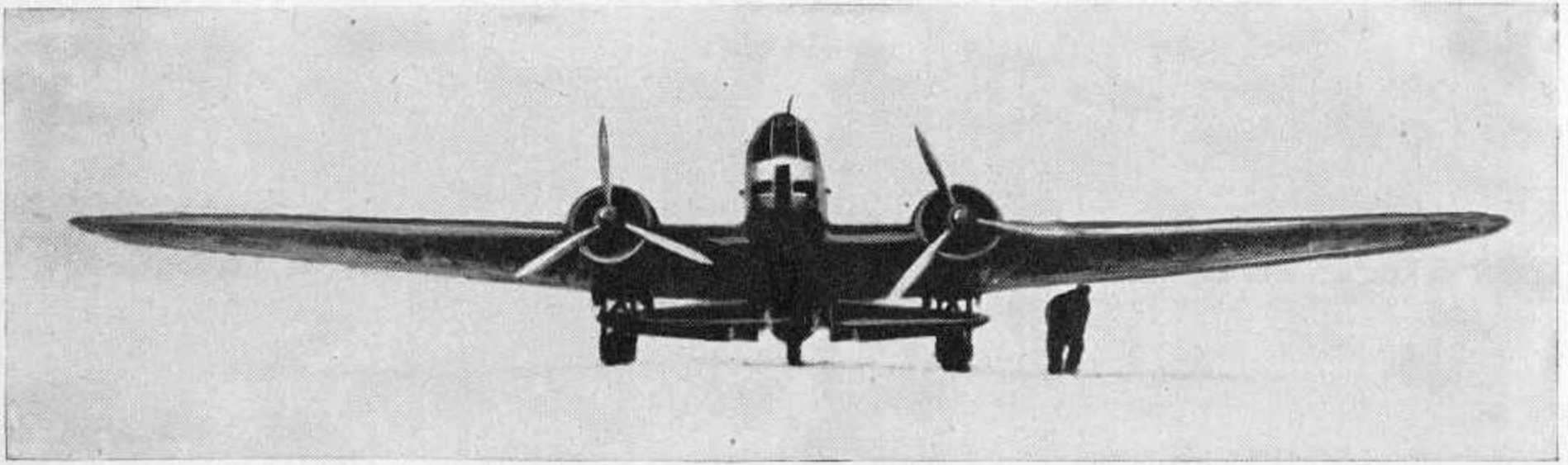
INTEREST: The DB–3 is an all-metal monoplane of sound light-alloy stressed-skin construction. The fuselage is straight with slight taper near the tail. The tail unit has fabric-covered control surfaces. The shape of the tail closely resembles that of the Stormovik. Both airplanes were designed by Serge Ilyushin. This plane is identical in appearance to the DB–3F, except for the nose of the fuselage and the engine cowlings.

SPAN: 70 ft. 2 in.
LENGTH: 46 ft. 10 in.
MAX. SPEED: 260 m. p. h. at 16,000 ft.
SERVICE CEILING: 25,500 ft.

A

B

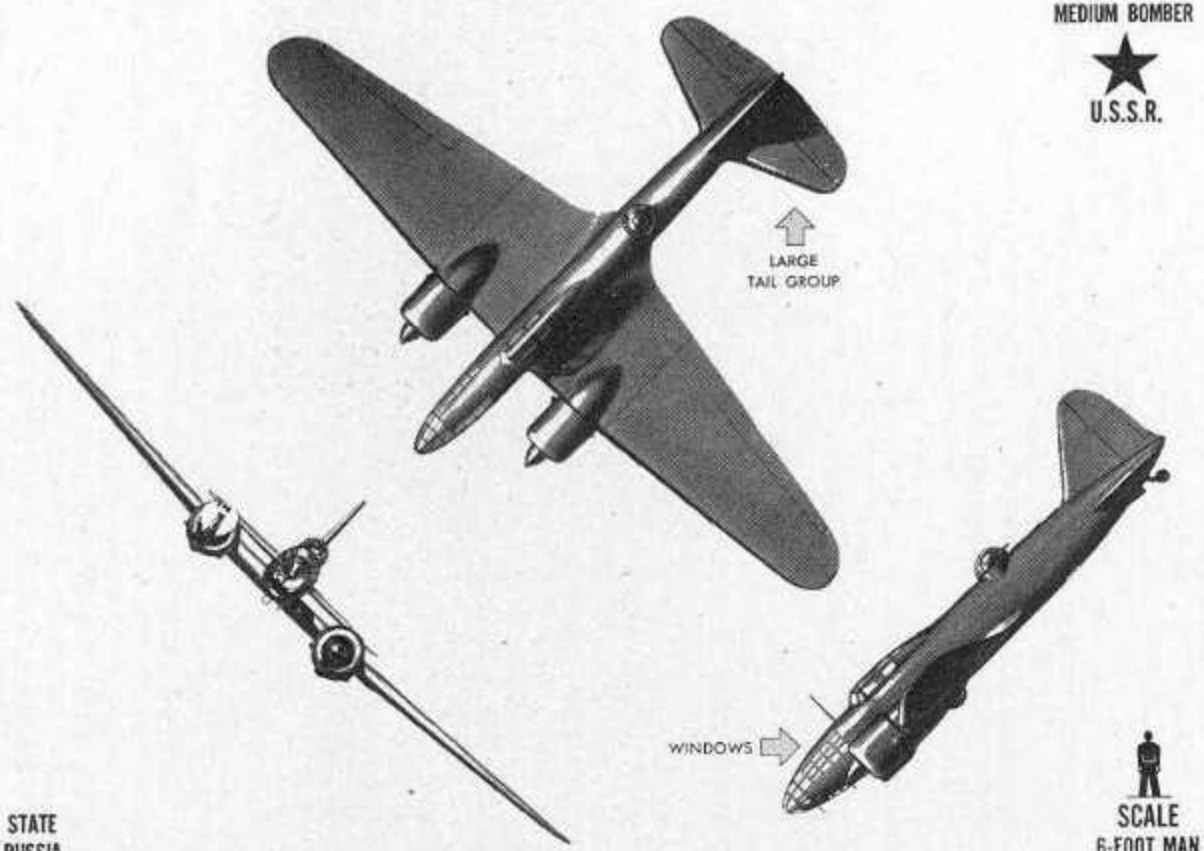
C



MEDIUM BOMBER

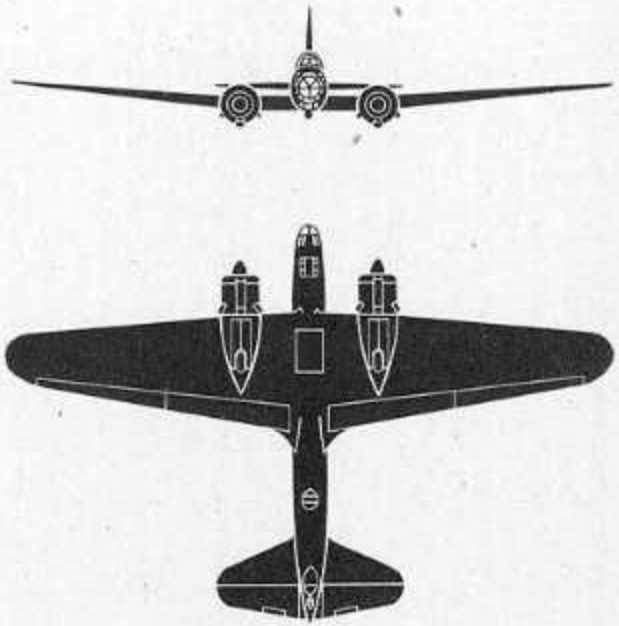
U.S.S.R.

DB-3F



STATE
RUSSIA

SCALE
6-FOOT MAN



DISTINGUISHING FEATURES: Twin radial engine, low-wing monoplane. Trailing edge has pronounced taper and fairs into fuselage. Transparent nose. Raised cockpit canopy. Round turret centered between fin and cockpit. Fin tapers forward. Tapered tailplane with rounded tips.

INTEREST: The DB–3 and DB–3F were developed from the ZKB–26 which flew from Moscow to Miscow Island, New Brunswick, in April 1939. The DB–3F has a streamlined pointed nose instead of a turret and slightly different engine cowlings; otherwise it is identical to the DB–3. The large wing root fillets are characteristic of most Russian types. The M–88 radial engines give about 1,100 hp. and are fitted with two-speed superchargers. Other equipment consists of variable pitch propellers and five 7.6-mm. machine guns. The DB–3F is slightly faster than the DB–3 and when fitted with extra gas tanks it can be used for long range photographic reconnaissance.

SPAN: 70 ft. 2 in.
LENGTH: 47 ft. 7 in.
APPROX. SPEED: 295 m. p. h. at 21,000 ft.
SERVICE CEILING: 29,000 ft.

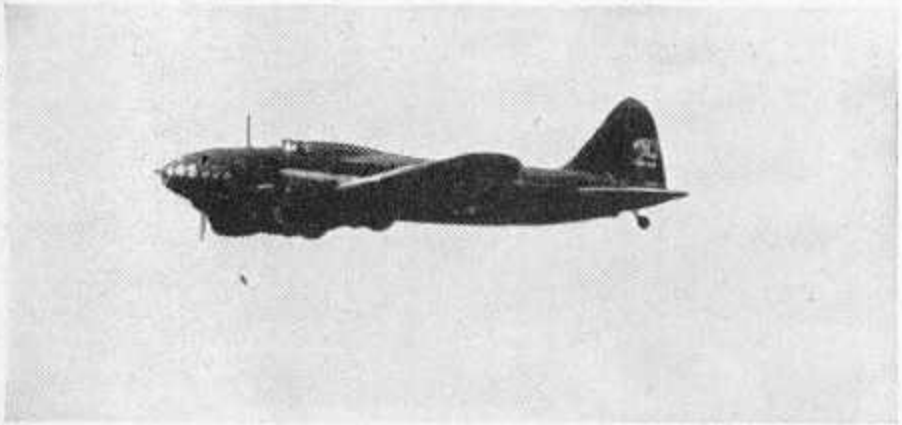
RESTRICTED

NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE

WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

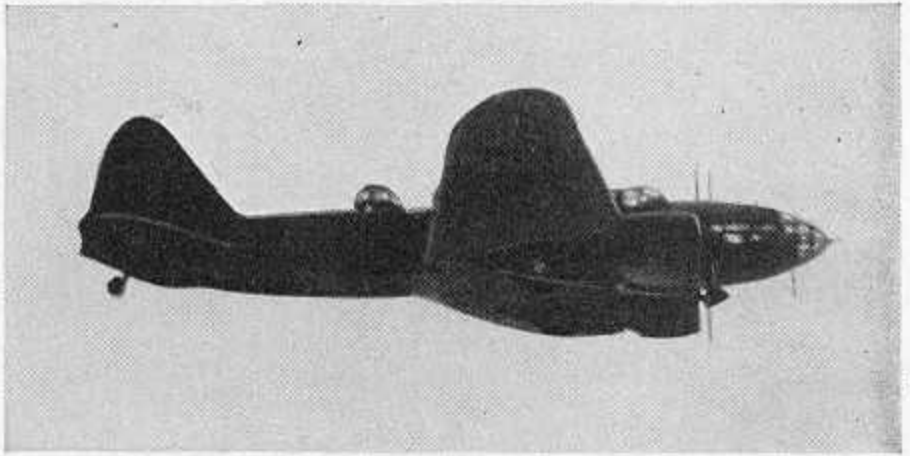
A



B

C

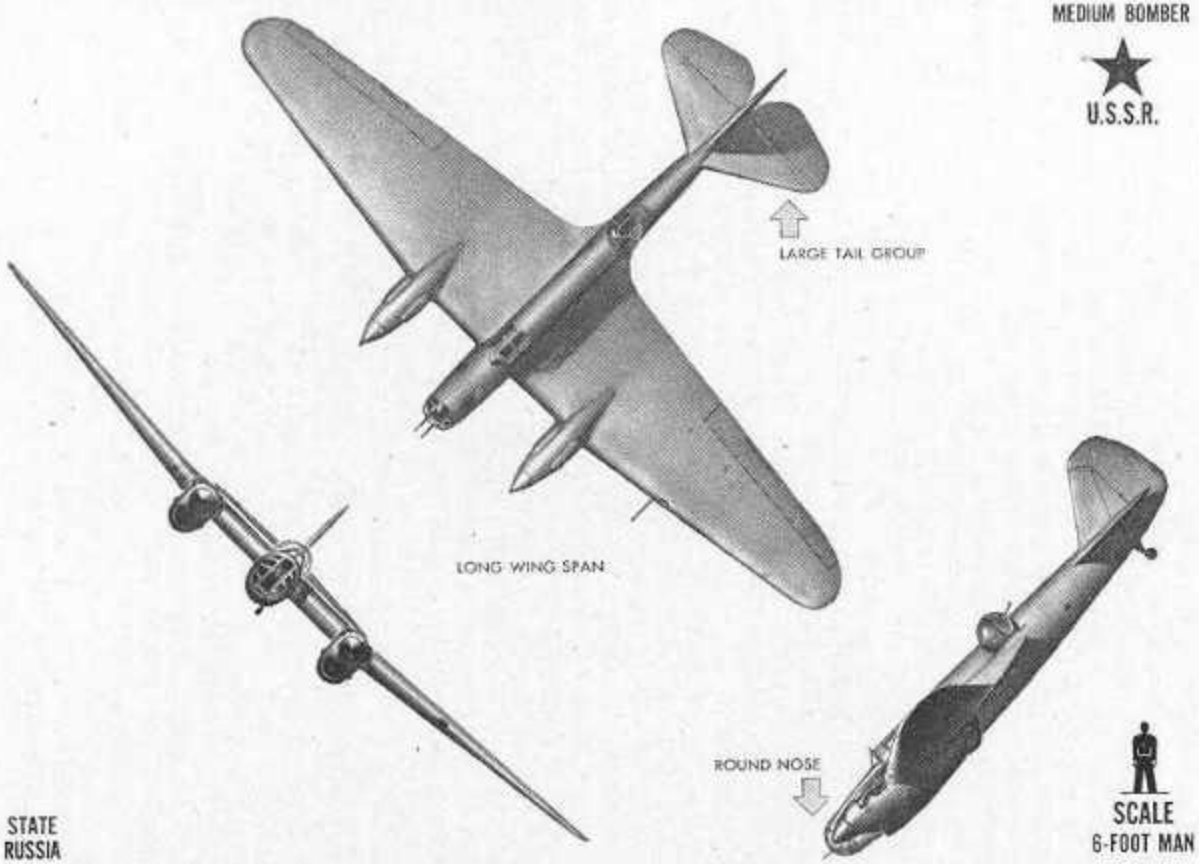
D

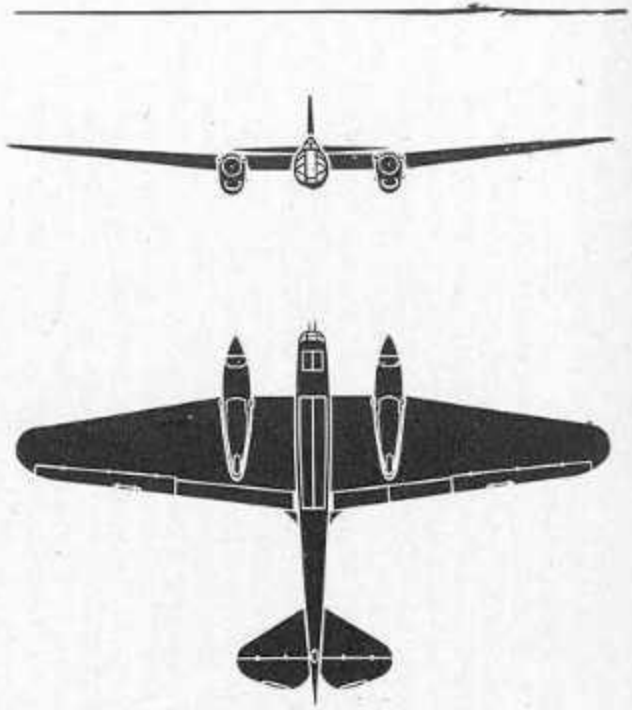


MEDIUM BOMBER

U.S.S.R.

SB-3





STATE
RUSSIA

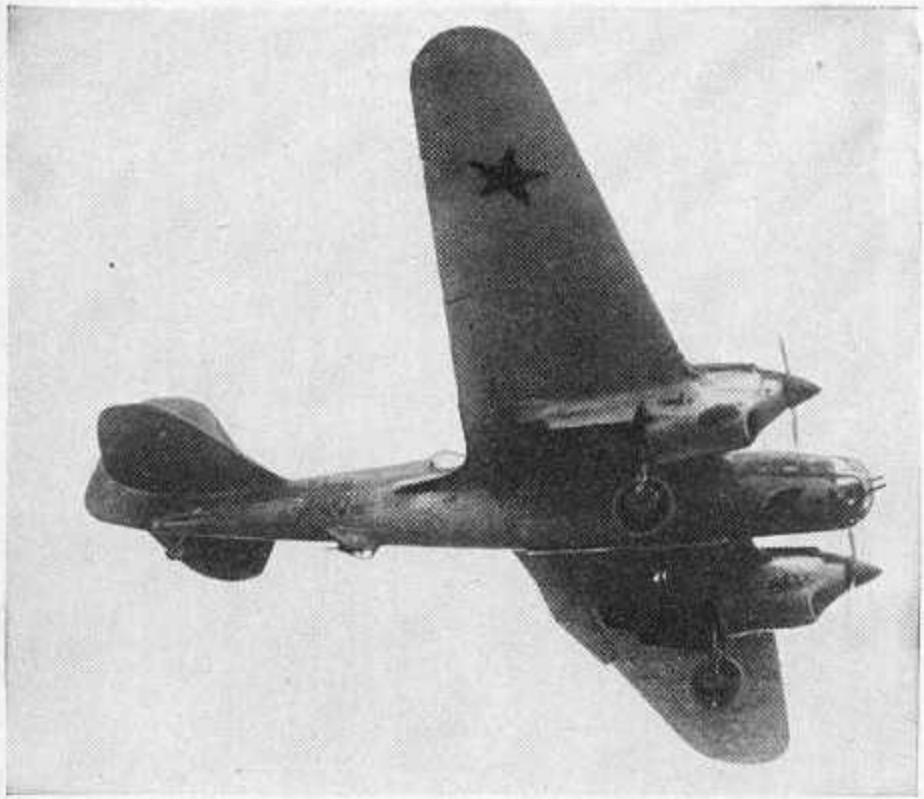
SCALE
6-FOOT MAN

DISTINGUISHING FEATURES: Twin-engine, high mid-wing monoplane. Long wing has equally tapered outboard sections with straight leading edge on center section. Liquid-cooled engines have pointed spinners and underslung radiators. Fuselage has rounded nose. Rudder is rounded. Fin tapers forward. Large cut-out in rounded trailing edge of elevators.

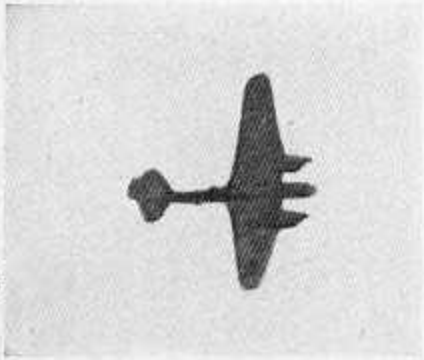
INTEREST: The SB–3 is a three-seater bomber and a later version of the SB–2. It has more powerful engines than the earlier version. Two different styles of cowlings are used to house this engine: One with a ducted underslung radiator and the other with both radiators and oil coolers in the wing. Many SB–3 bombers have dive brakes under the wing, outboard of the nacelles. This bomber is protected by leakproof tanks and armor plate and carries 4 x 7.6-mm. guns. The later models of this plane are equipped with a dorsal turret, whereas the earlier planes had an open gun position with sliding cover identical with that used on the SB–2.

SPAN: 66 ft. 11 in.
LENGTH: 41 ft.
SERVICE CEILING: 28,000 ft.
APPROX. SPEED: 260 m. p. h. at 14,000 ft.

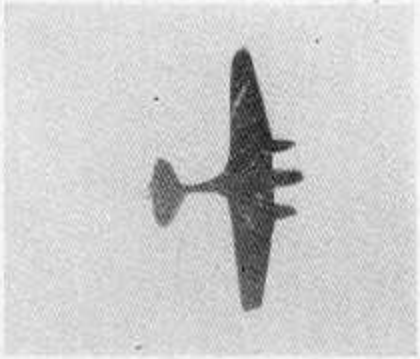
RESTRICTED



A



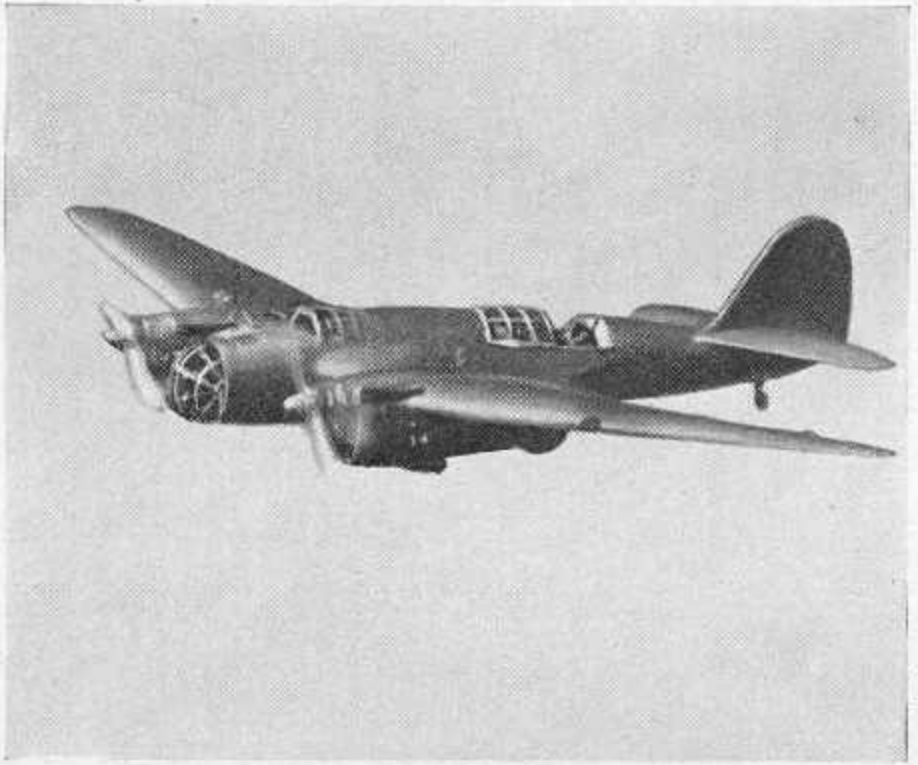
B



C

D

E



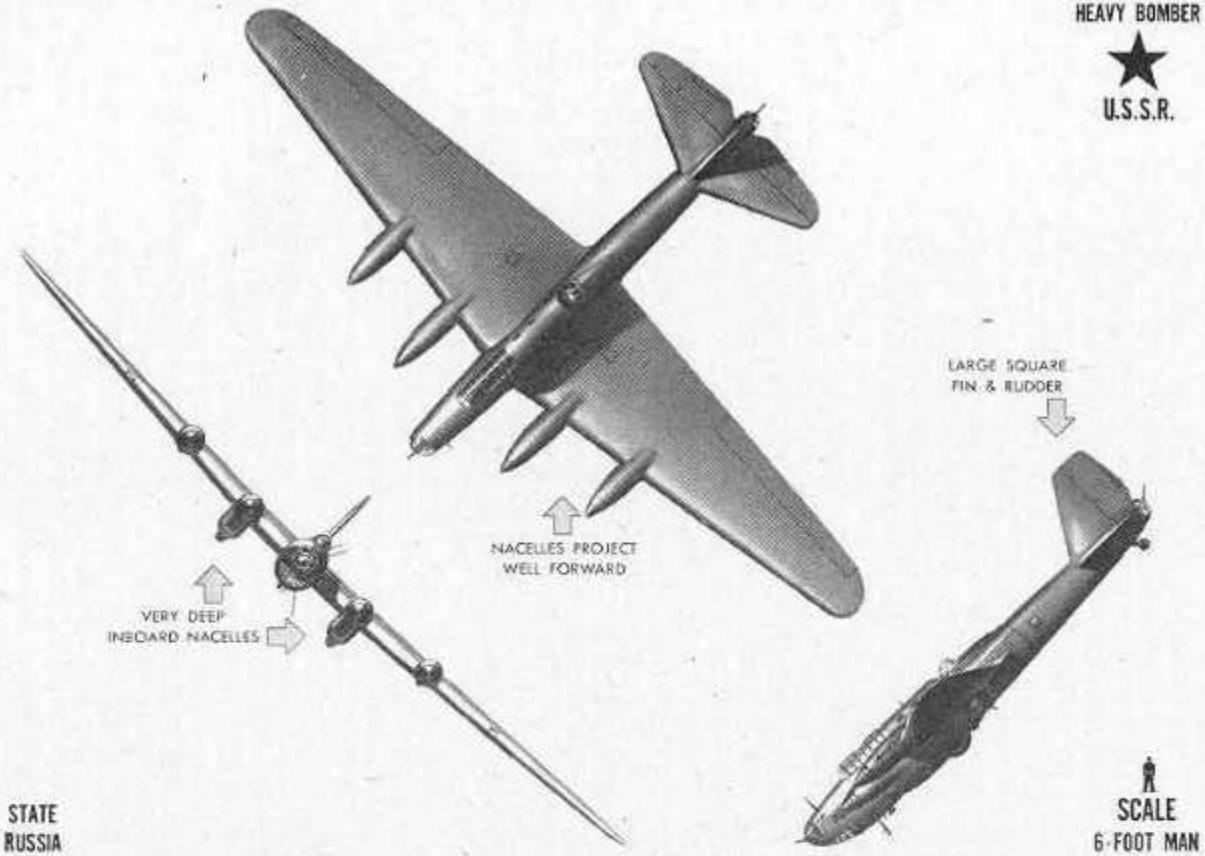
F

HEAVY BOMBER

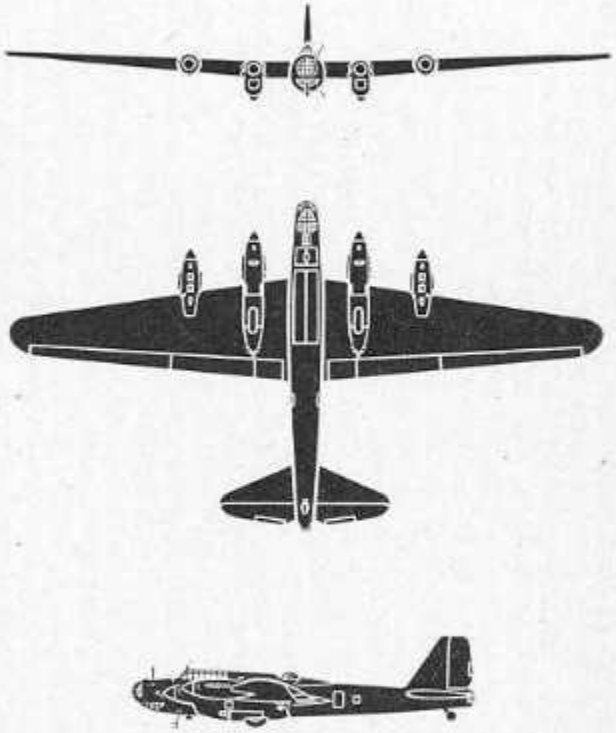
★

U.S.S.R.

TB-7



SCALE
6-FOOT MAN



STATE
RUSSIA

DISTINGUISHING FEATURES: Four inline engine, mid-wing monoplane. Wings are tapered on both edges with rounded tips. Outboard nacelles small and round. Inboard nacelles very deep with large radiator under engine and gun position in the rear. Raised greenhouse with rear portion covered. Top gun turret. Tailplane is tapered with round tips, while the single fin and rudder is tall and angular.

INTEREST: This is the best known Russian long-range bomber. These planes have raided Berlin, Danzig, and Balkan cities. It is now in large-scale production and is in service with the new bomber command of the Red Air Force. The TB–6B, from which the TB–7 was redesigned, was used in Polar expeditions before the war. The TB–7 carries a crew of about 9 men. Gun positions in the large underslung inboard nacelles are an interesting feature of this aircraft.

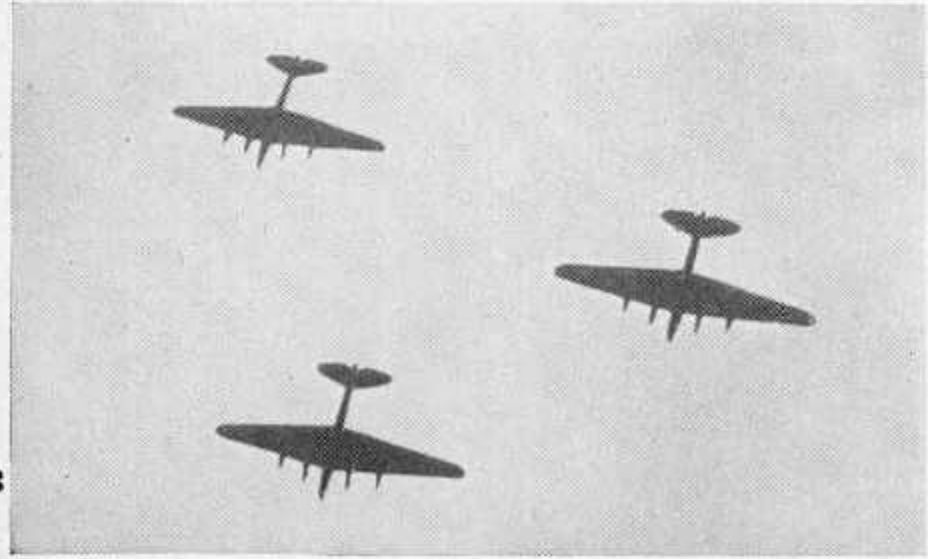
SPAN: 131 ft. 2 in.
LENGTH: 73 ft. 10 in.
MAX. SPEED: 275 m. p. h. at 22,000 ft.
SERVICE CEILING: 36,000 ft.

RESTRICTED

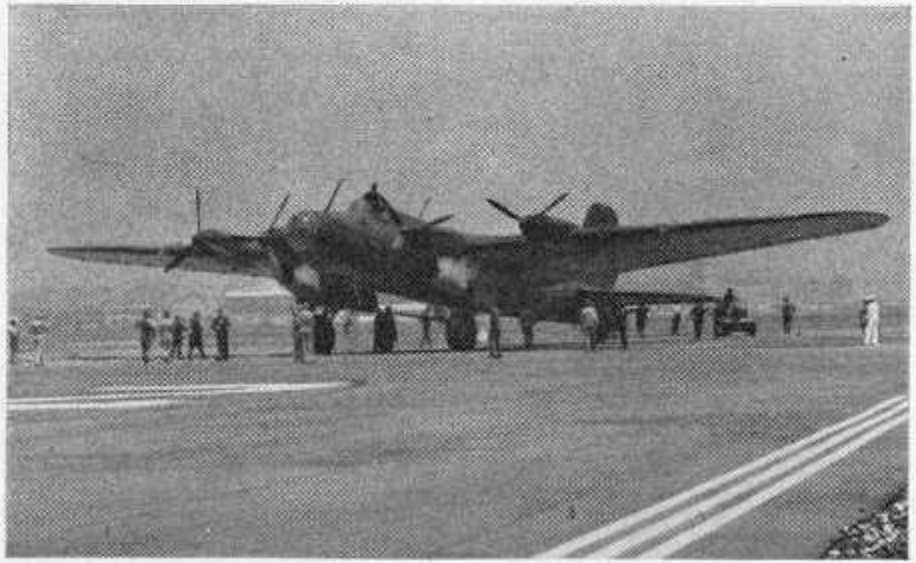
NOV. 1943
FROM DATA CURRENTLY AVAILABLE

SUPPLEMENT ONE [WAR DEPARTMENT FM 30—30
NAVY DEPARTMENT BUAER 3

A



B

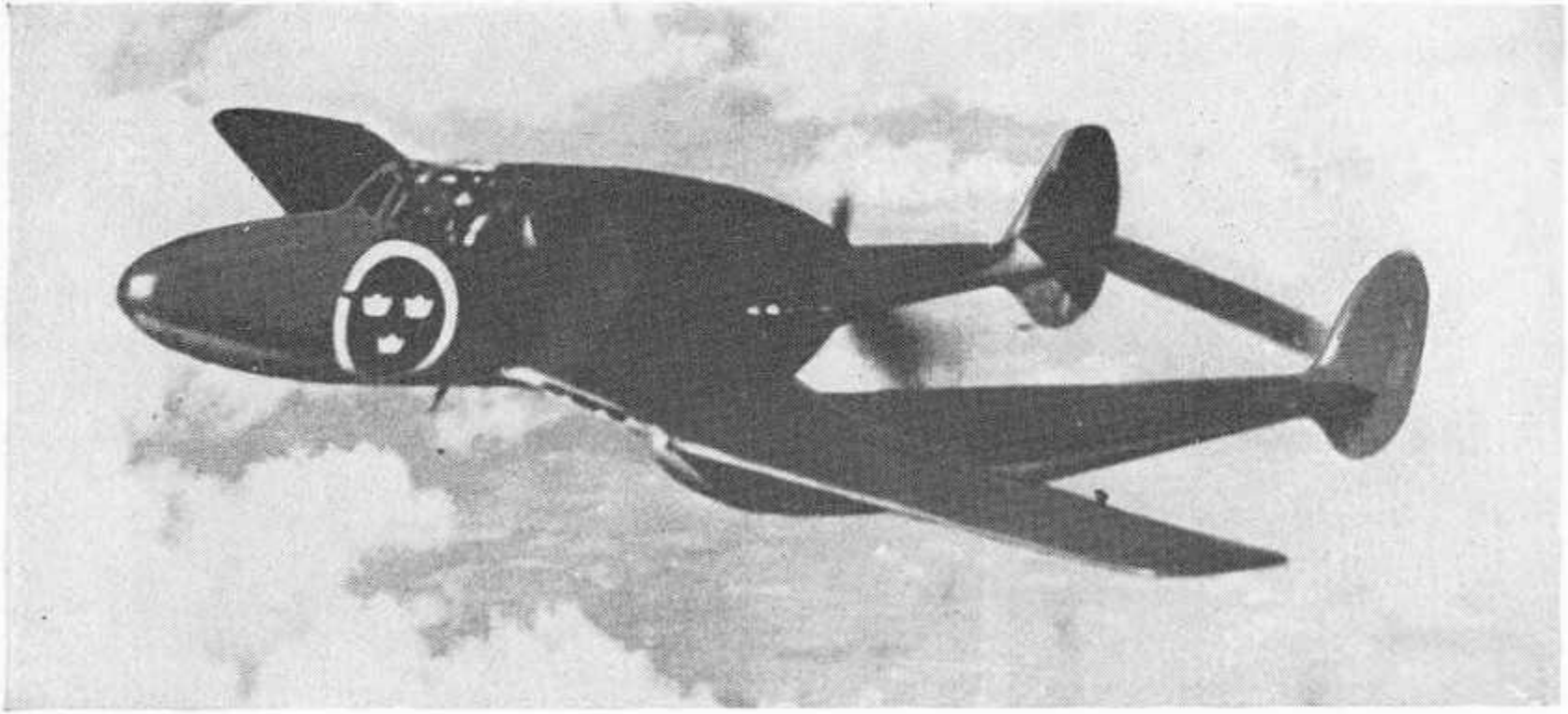


C

MISCELLANEOUS AIRCRAFT

J-21

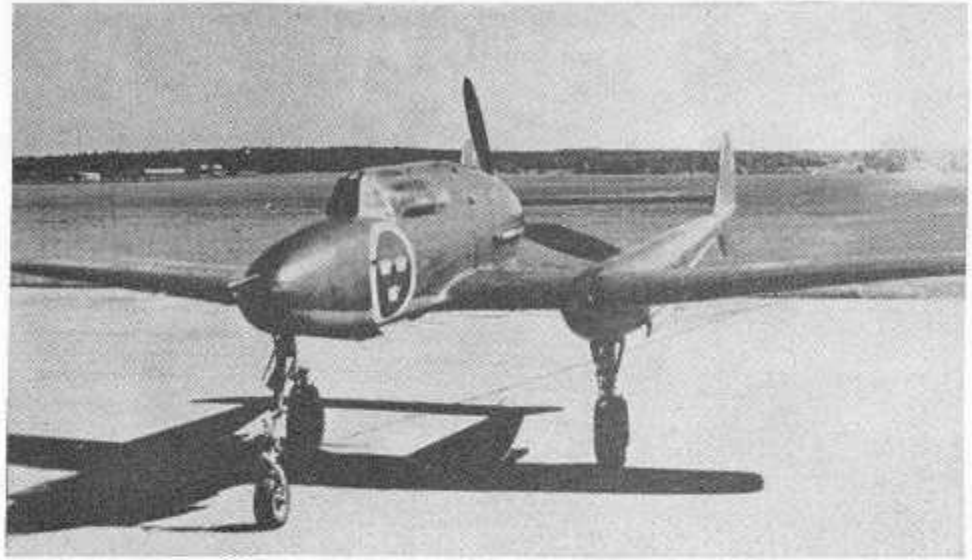
SWEDEN

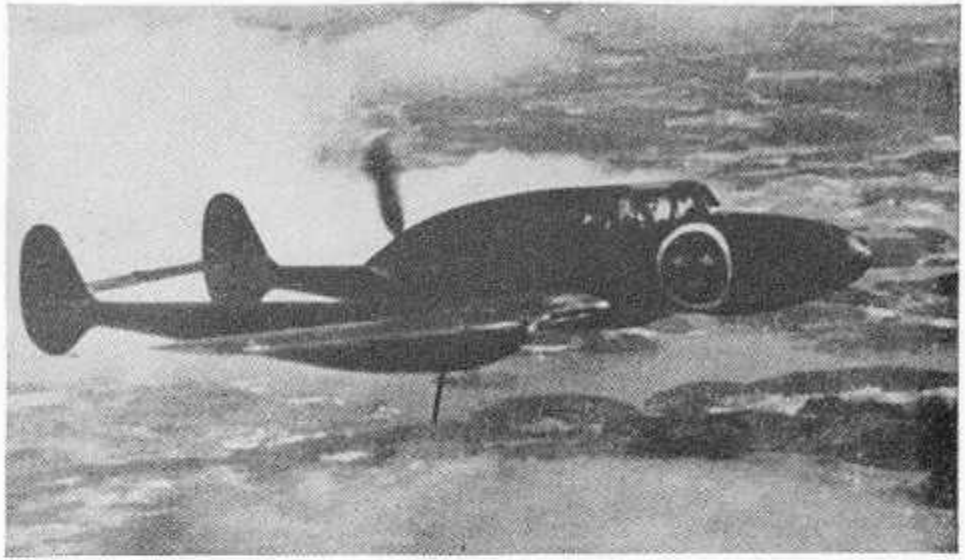


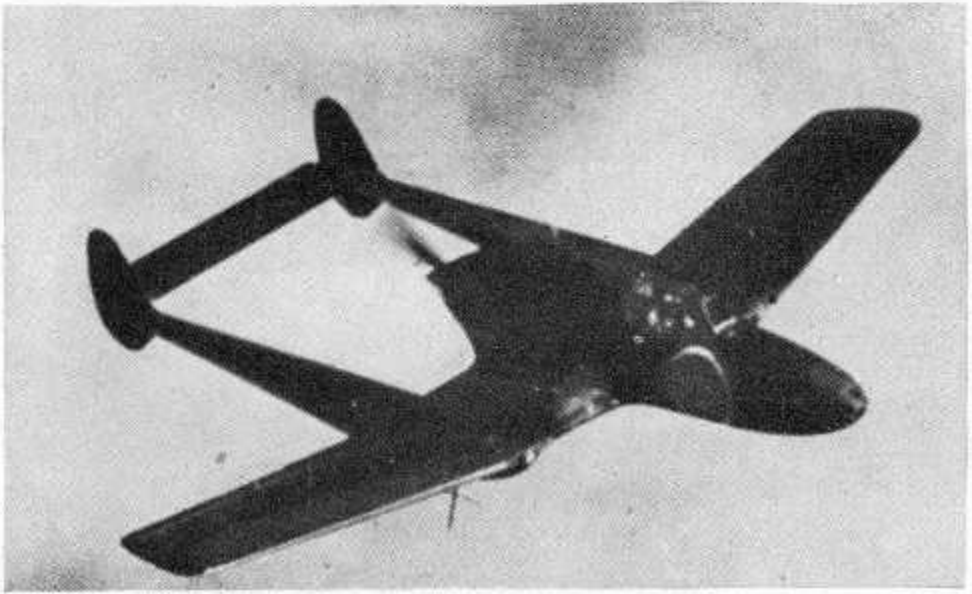
INFORMATION Nicknamed the "Beetle" the J-21 is a single seat, twin boom, pusher type fighter. Powered by a Daimler Benz 603B, 1,550 horsepower engine, the plane is equipped with tricycle landing gear. The fighter's armament consists of 1–13mm fixed gun in each boom and 2–13mm and 1–20mm fixed gun in the nacelle, all firing forward.

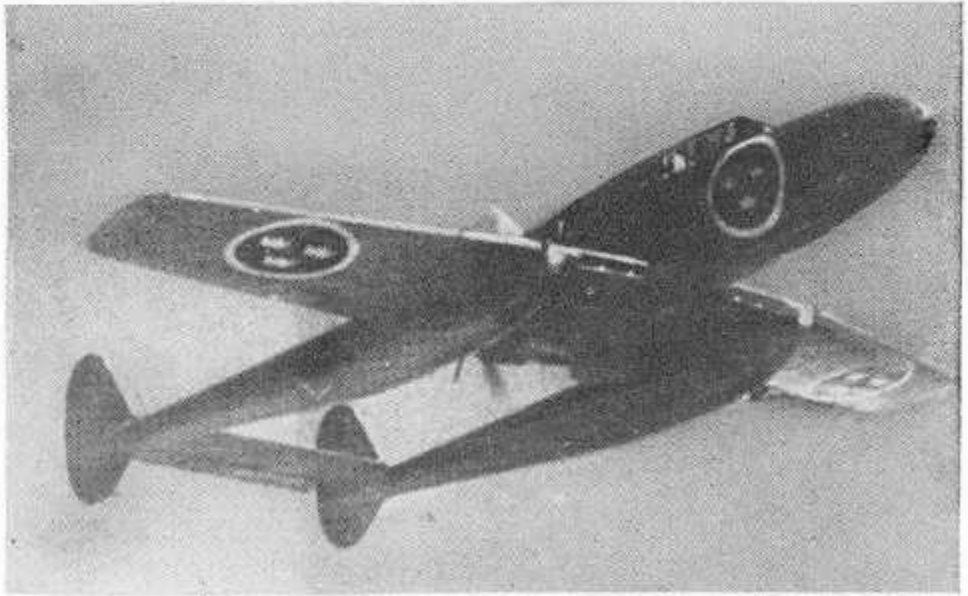
DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.—ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
40′–0″			420	2,000		

APRIL 1946







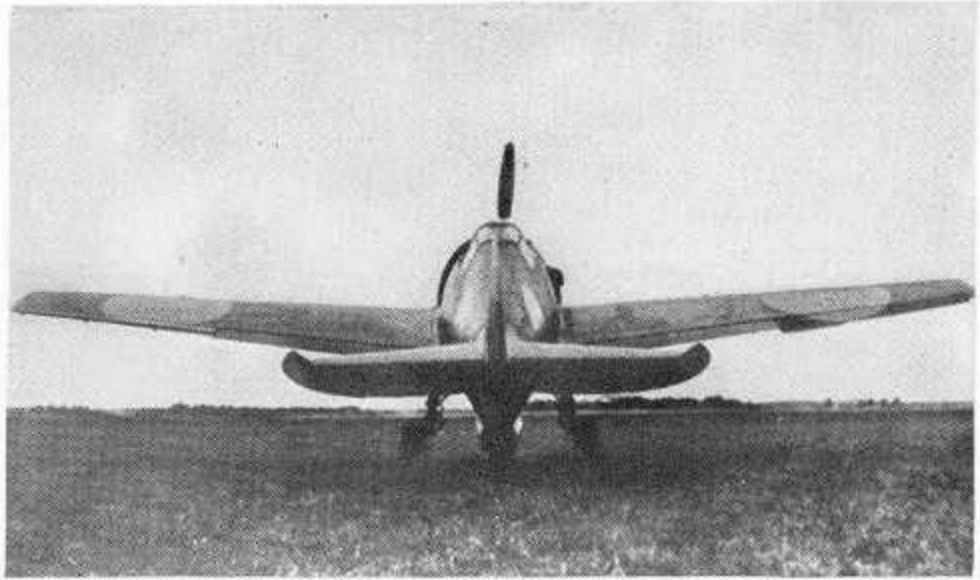


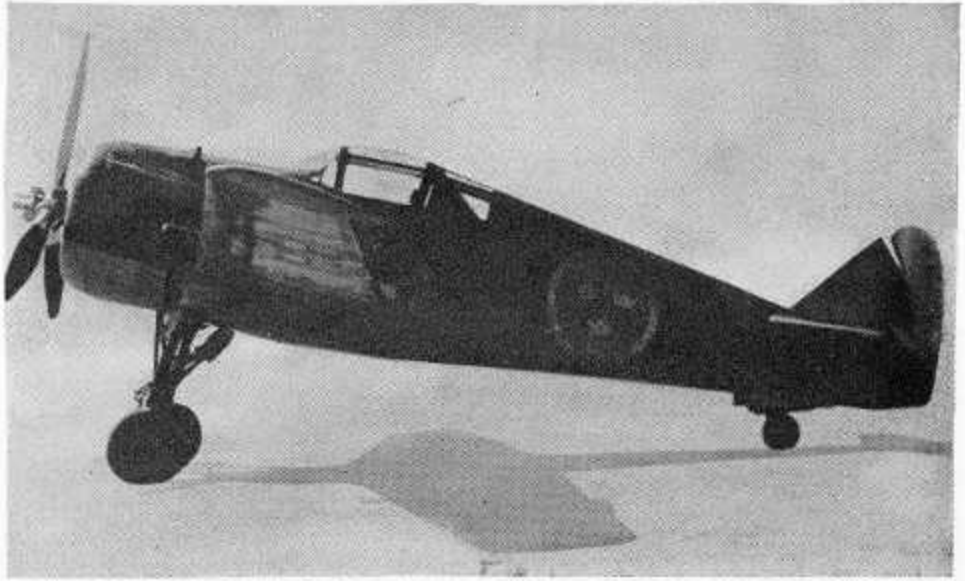
J-22

SWEDEN

INFORMATION The J–22 is a single seat fighter powered by a Pratt and Whitney Twin Wasp engine. Its armament consists of 2–13.2mm fixed guns in each wing.

DIMENSIONS		WEIGHT LBS. GROSS	MAX. SPEED MPH.–ALT.	RATE OF CLIMB FT./MIN.	SERVICE CEILING	RANGE NORMAL LOAD
SPAN	LENGTH					
32'–9"	25'–3"		372			





U. S. TRANSPORT AIRCRAFT

UNITED KINGDOM
(BRITISH)
AIRCRAFT

USSR AIRCRAFT

EUROPEAN AIRCRAFT

ASIATIC AIRCRAFT