RECOGNITION
JOURNAL



CONVOY

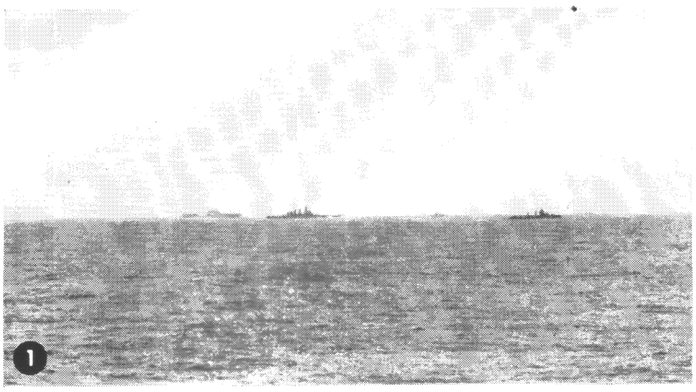
RESTRICTED
JUNE, 1944
NUMBER 10

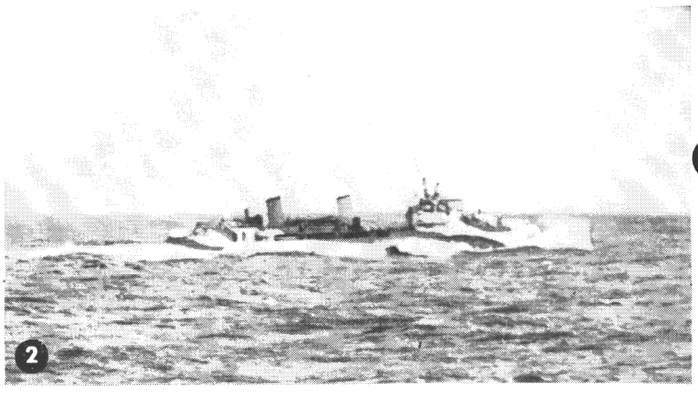
DECLASSIFIED

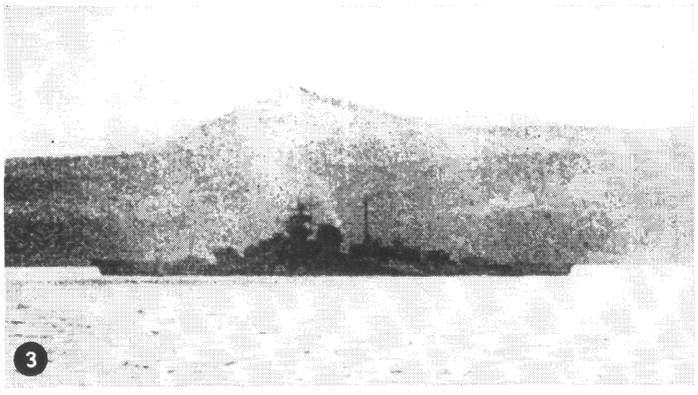
WAR DEPT.
NAVY DEPT.

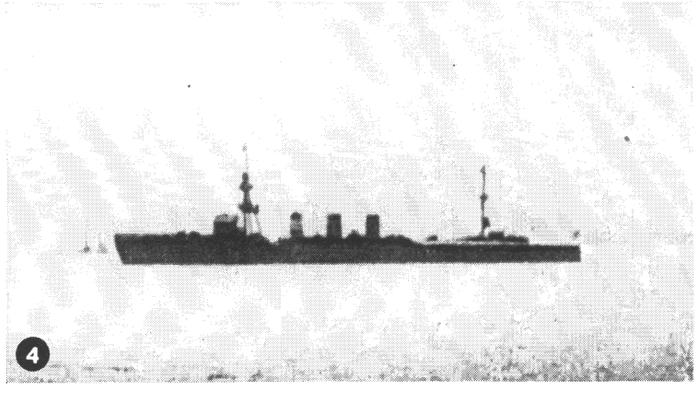
SHARE THIS COPY

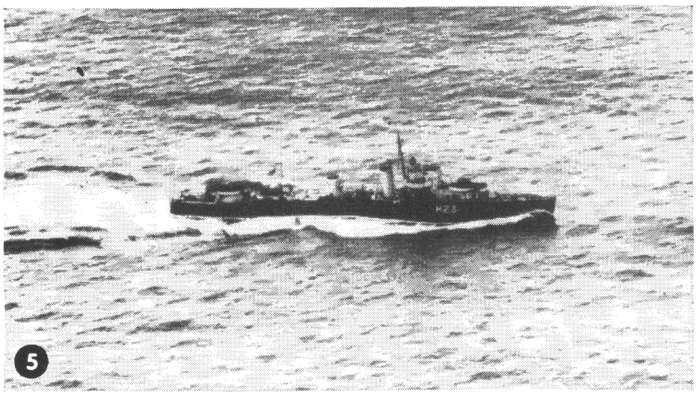
QUIZ NO. 1: WARSHIPS OF FOUR NAVIES

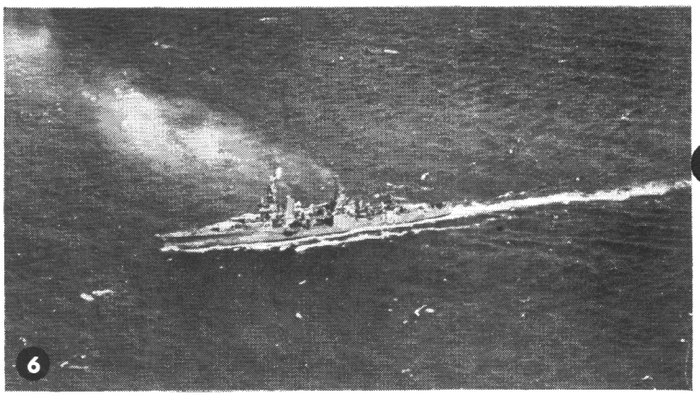

1

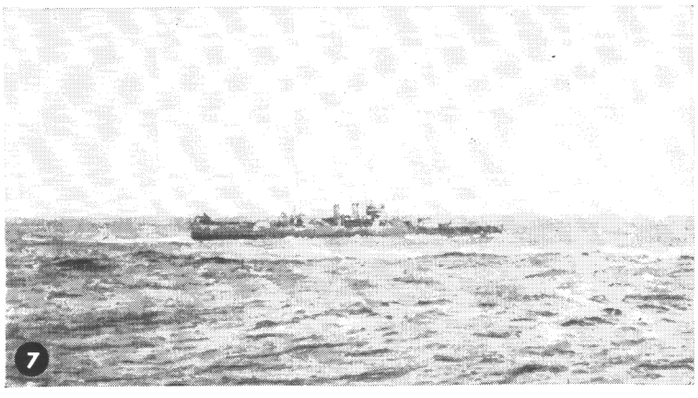

2

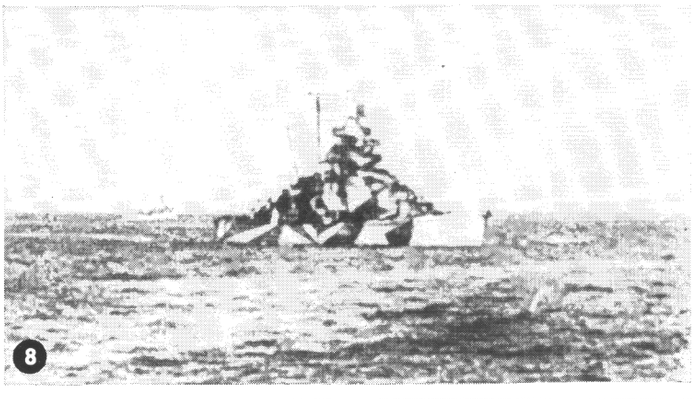

3


4

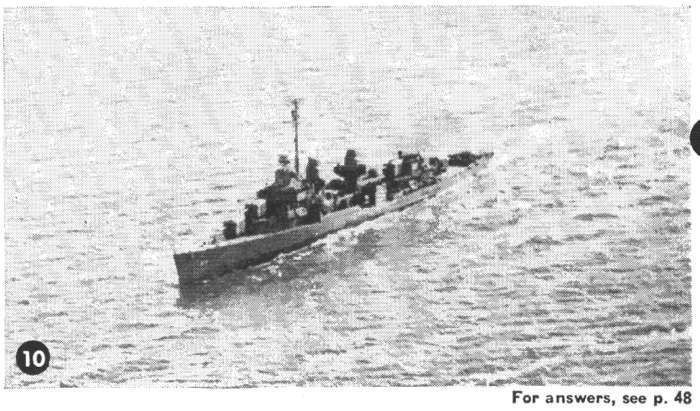

5


6


7


8


9


10

For answers, see p. 48

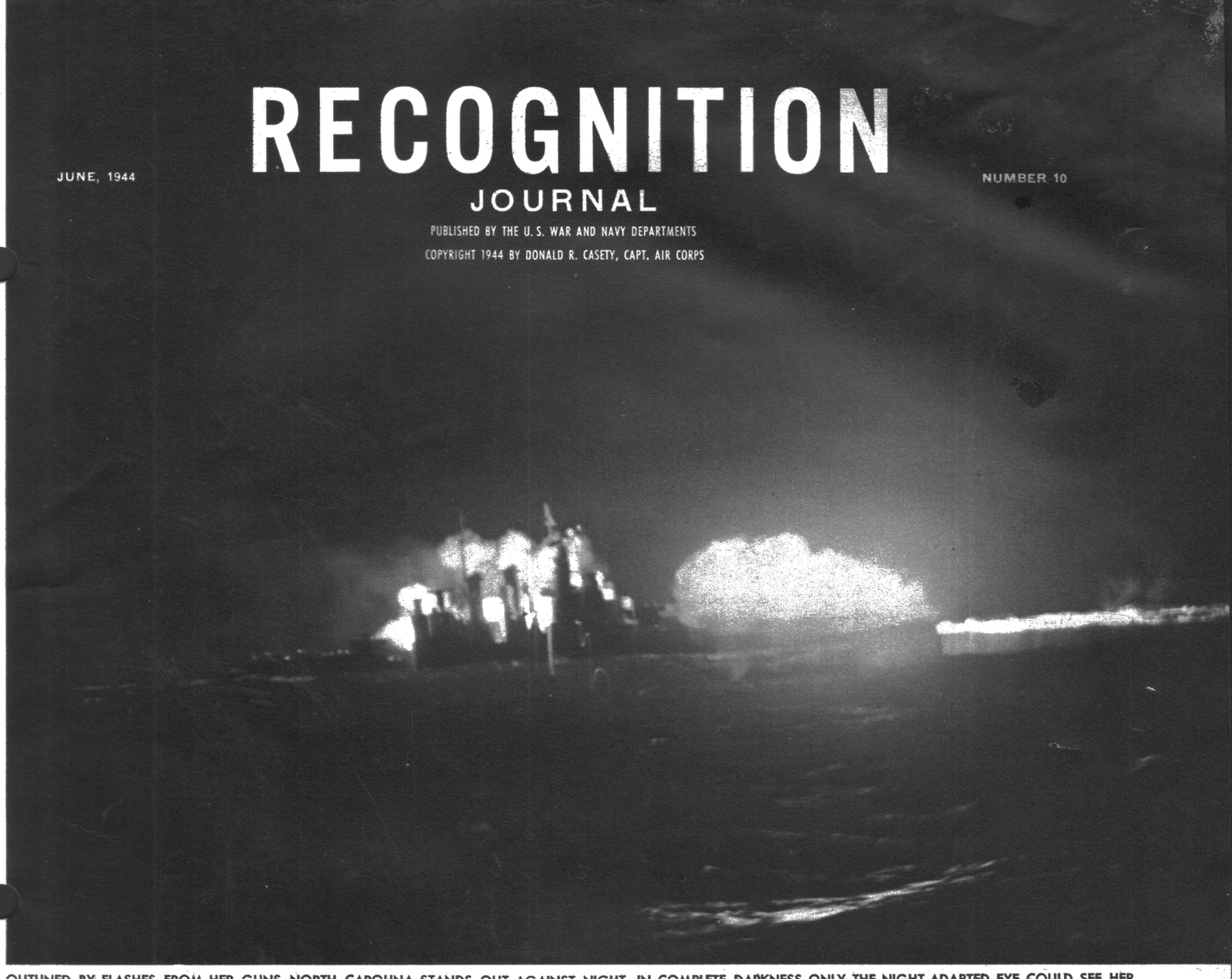
JUNE, 1944

RECOGNITION JOURNAL

NUMBER 10

PUBLISHED BY THE U. S. WAR AND NAVY DEPARTMENTS

COPYRIGHT 1944 BY DONALD R. CASETY, CAPT. AIR CORPS



OUTLINED BY FLASHES FROM HER GUNS, NORTH CAROLINA STANDS OUT AGAINST NIGHT. IN COMPLETE DARKNESS ONLY THE NIGHT-ADAPTED EYE COULD SEE HER

WAR AT NIGHT

War is a 24-hour business. And no time is more important to the fighter than the black hours between dusk and dawn. For this is the attacker's time . . . stealth and darkness cover his approach; and if he knows his target the cards are stacked his way. The only insurance against such an attack is vigilance and, when that fails, tragedy can result.

Vigilance, like all the elements of war, can be used positively. When neither side has an exact preview of a situation, the fighter with the best observation has the advantage. Much of this observation can be carried on by radio-locator equipment but, despite its many great accomplishments thus far, radar is not infallible. To get best results it must be supplemented by visual lookouts. Early initial contacts by lookouts far outnumbered radar contacts in the early days of the war. Until mechanical detection reaches its ultimate development, the human eyes of lookouts will remain the best protection.

Until war gave it the necessary impetus, little research had been done in night vision. We have had to learn how to live and see in the dark. First to realize the enormity of the problem and to make practical experiments in the unusual physiology of night vision were the British. During the Battle of Britain pictures of begoggled, carrot-eating RAF nightfighter pilots were commonplace. Though the carrot theory is an exploded myth, their sound theories of scanning form the basis of instruction in the scores of U.S. Army and Navy schools which are now training thousands of prospective lookouts.

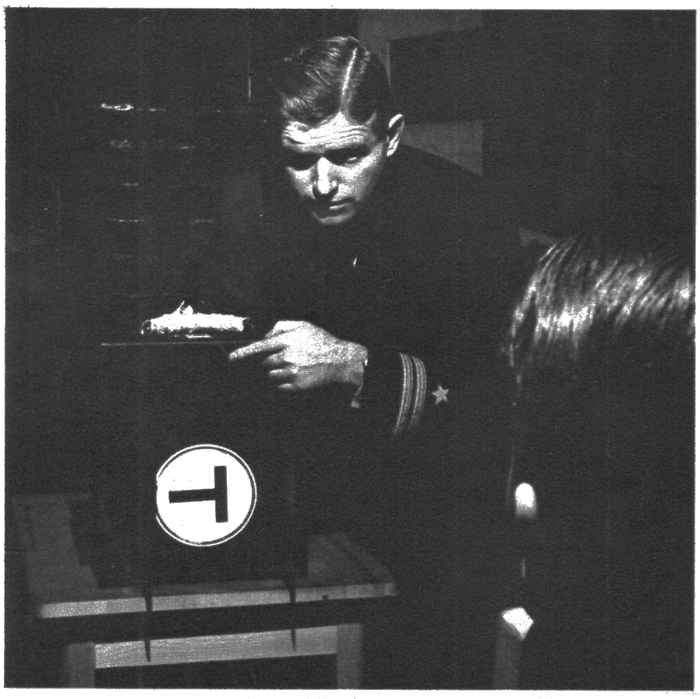
In this issue the *Journal* takes up night vision at sea; in a future issue night scanning for aircraft will be discussed.

At a typical school, lookout candidates are learning for the first time the extreme importance of their job which is so vital that a warship carries hundreds of lookouts of four types; sky, surface, horizon and, in bad weather, fog. They realize also that every hand on a ship must be a secondary lookout.

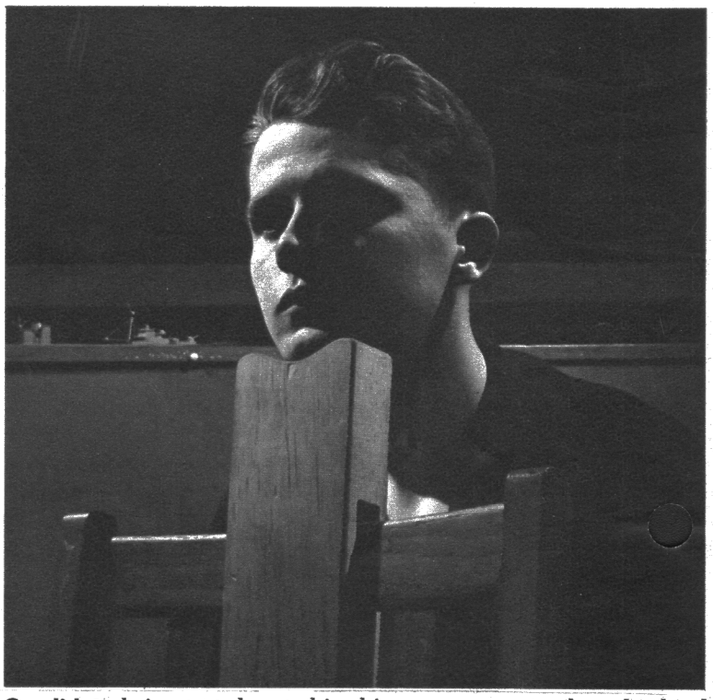
Prospective lookouts are learning for the first time that they are equipped, for the most part, with two types of vision. In addition to their primary or daytime sight, they have secondary or night vision. They are taught to sensitize their retinas to pick up light 10,000 times too dim for their daylight eyes to see, so they can spot a lighted match five miles away. They are taught to distinguish dim shapes in the night without looking directly at them, to scan the skies and horizon with short jerky movements of their eyes so that the exquisitely sensitive cells (rods) at the periphery of their retinas will register shapes that the night-blind cells (cones) located in the center of the retina cannot see.



Men in red goggles relax in classroom as they wait to become dark-adapted. The goggles cut off all but red light, allow the ultra-sensitive rods (the night-seeing portion of the retina) to come into operation, while still permitting daylight vision with the color-sensitive cones. Dark adaptation takes about half an hour and becomes complete with five minutes in pitch dark during which the cones cease to function.

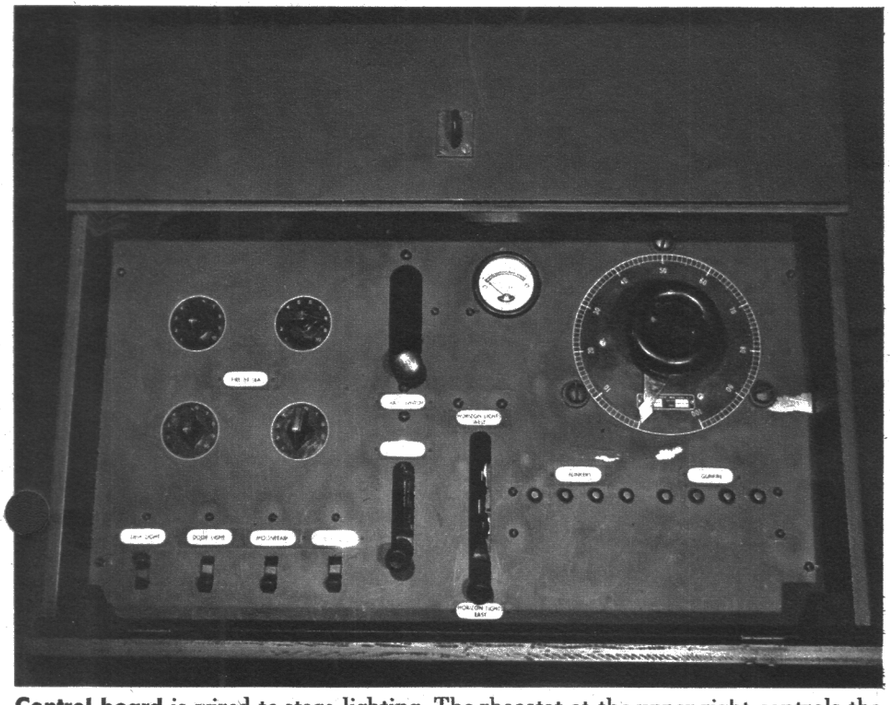


Tests are necessary to determine ability to see in the dark. Student watches a T-shaped plane model on luminous dial and must read correctly the direction it is flying. About 5% have poor night vision.

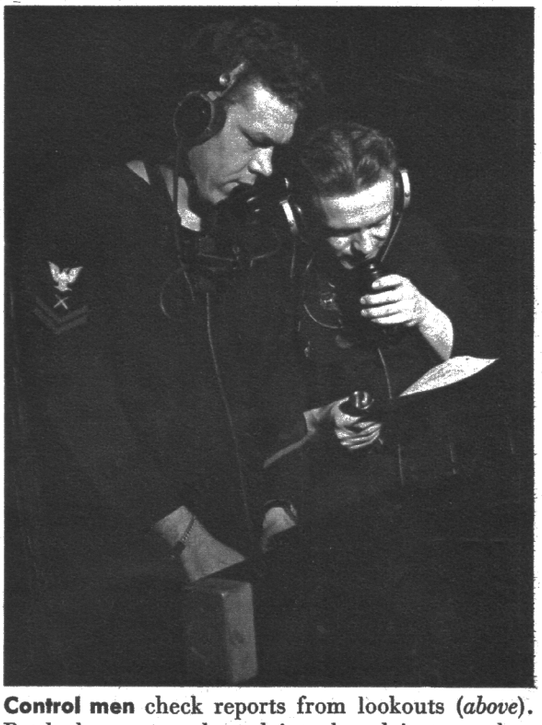


Candidate being tested rests his chin on a support to keep his head immobile while his eyes scan the disk. Candidates frequently discover that they have good night vision but have not yet learned to use it.

Simulated horizon duplicates conditions found on shipboard. Men in foreground, wearing battlephones, are acting as port and starboard watch. As models move along stage, lookouts identify the ship, report its relative bearing to the men at the control board (*below right*). Above, port watch calls "BB at three four oh"; starboard, "Jap carrier at zero four oh." Note, neither watch looks directly at the objective.



Control board is wired to stage lighting. The rheostat at the upper right controls the degree of lighting. The switch at center produces east horizon light when down, west light when up. Other switches simulate fire at sea, moonlight, lightning, and gunfire.



Control men check reports from lookouts (*above*). Battlephones are plugged into board just as they would be connected from lookout station to bridge.

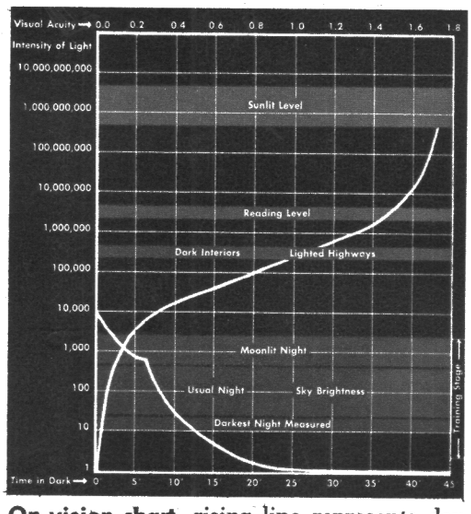
HOW TO SEE IN THE DARK

Human beings are born with two different types of sight, but we have forgotten how to use our night eyes. The human eye is like a camera. It has a lens, a diaphragm (iris) and a receptive film (the retina). But it differs in that the film is a double mechanism. In daylight, one set of cells called cones is most sensitive. These see detailed form and color. There are about 7,000,000 concentrated at the center, or fovea, of the retina. To see with the cones we look straight ahead.

The second set of cells are called rods. They are concentrated in the outer parts of the retina. They are blinded by strong light but are highly sensitive to motion and 10,000 times as sensitive to light as the cones. They are color-blind. In order to see with the rods they must be cut off from light for about 30 minutes until a subtle chemical change takes place. Then, because of their location, it is necessary to look obliquely at what you wish to see.

As the light grows dim, the pupil of the eye expands to allow more light to reach the retina. This first step in dark adaptation takes about 15 seconds.

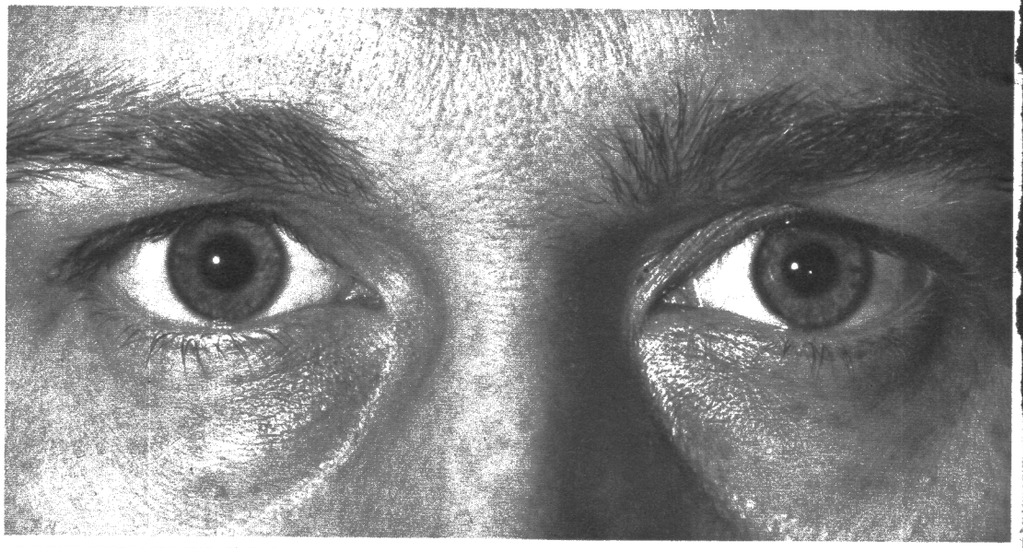
Once the eye is dark-adapted, it is still necessary to learn to use it. Because the rods are so sensitive to motion, your eyes should sweep the field of view in short jerky movements; moving, pausing briefly, moving again. Because the cones are now blind, the image will appear on the outer part of the retina. You must learn not to try to look at it. It will be a fuzzy grey shape, but with practice you will learn to recognize it for the ship, tank or plane it is.



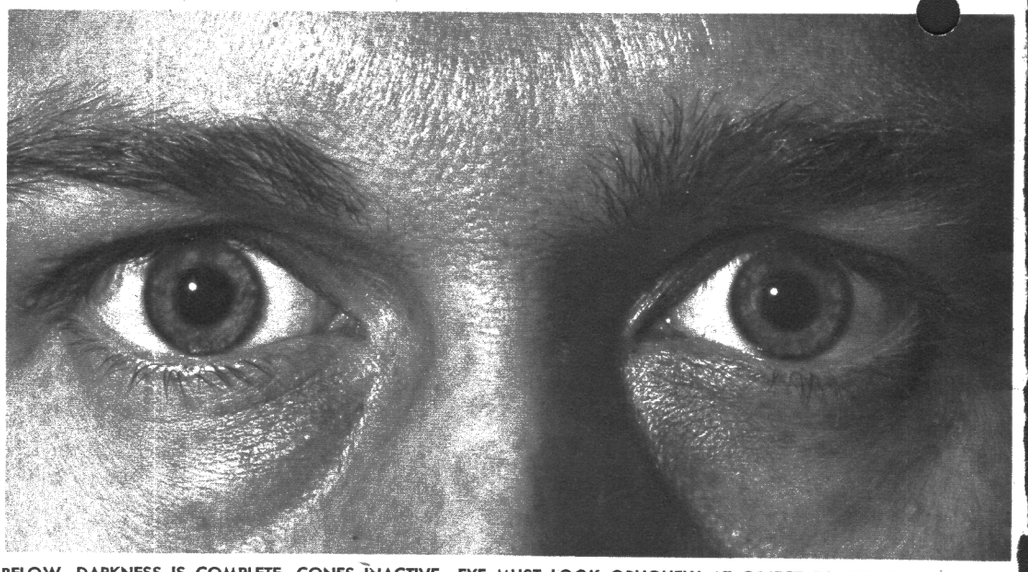
On vision chart, rising line represents day vision; falling line stands for night eyes.



IN STRONG DAYLIGHT THE EYE DIAPHRAGM (IRIS) IS NEARLY CLOSED, THE LENS AREA (PUPIL) IS SMALL



AS LIGHT DECREASES IRIS OPENS ALLOWING MORE LIGHT ACCESS TO CELLS OF RETINA (ABOVE, BELOW)

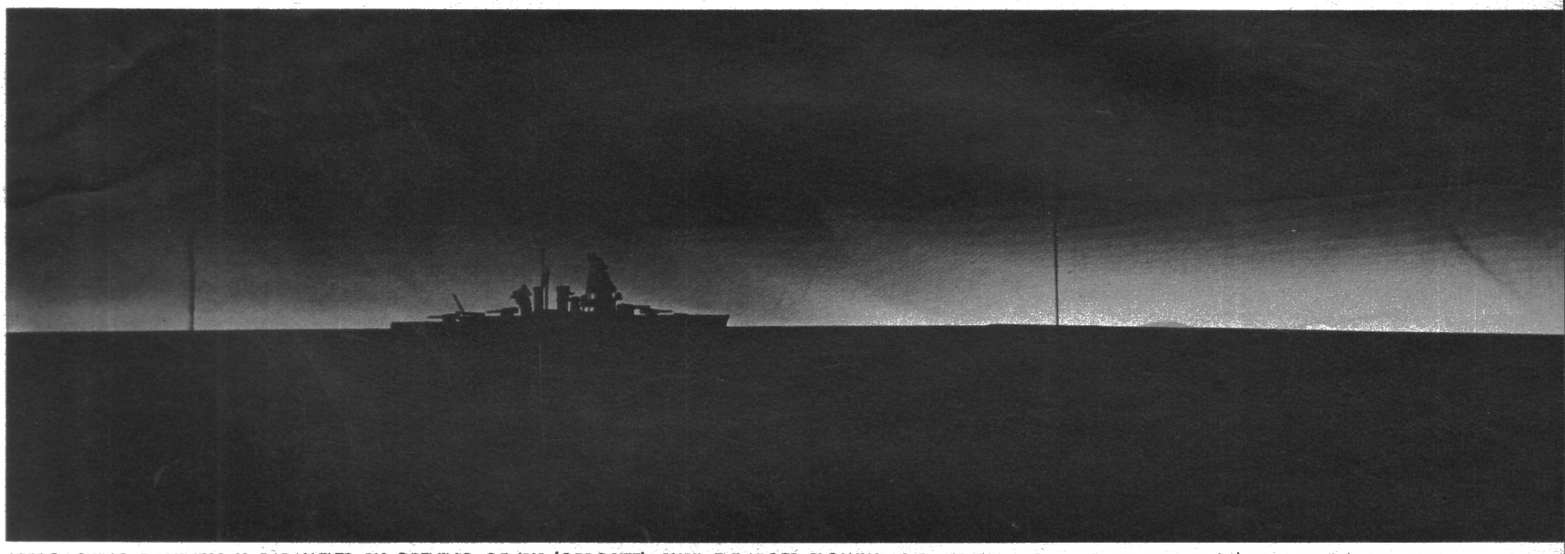


BELOW, DARKNESS IS COMPLETE. CONES INACTIVE. EYE MUST LOOK OBLIQUELY AT OBJECT TO SEE IT

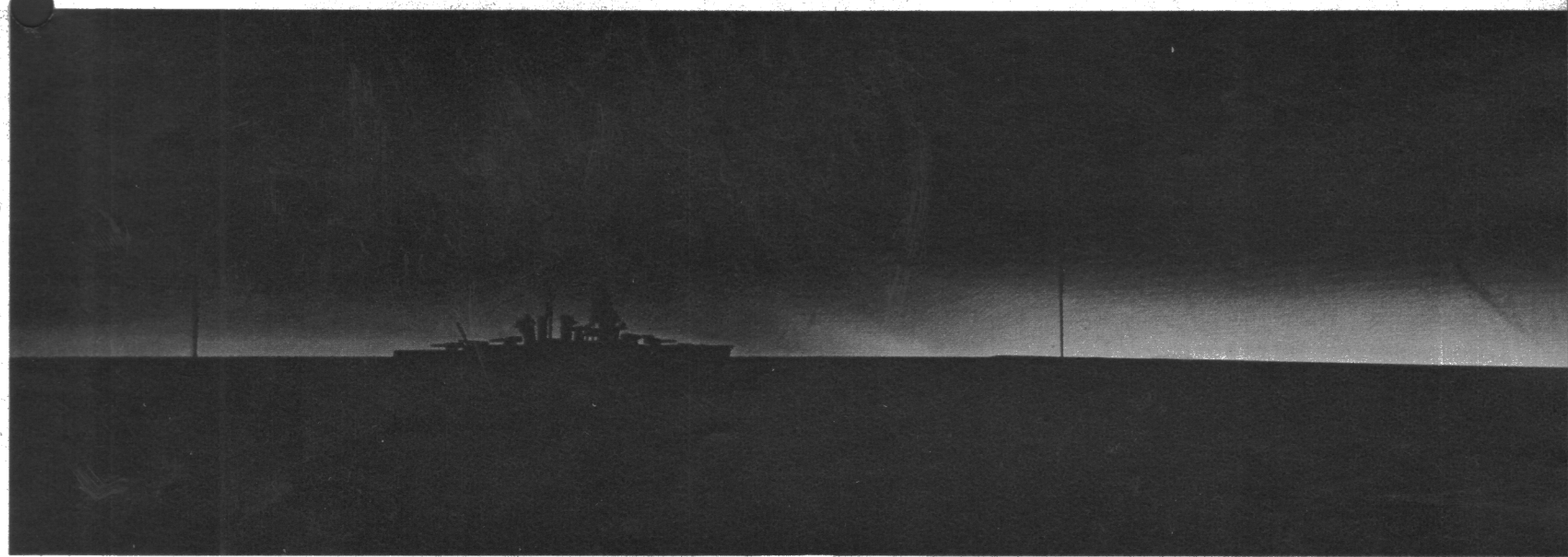




IN SUNSET CONES ARE STILL OPERATIVE AND VISUAL ACUITY THEREFORE GOOD, OBJECT IS SHARP AND CLEAR, IMAGE EASILY SEEN AND TRANSMITTED TO BRAIN



APPROACHING DARKNESS IS PARALLELED BY OPENING OF IRIS (OPPOSITE); PUPIL ENLARGES SLOWLY AS DARKNESS INCREASES GRADUALLY (BELOW AND BELOW LEFT)



IN NEAR-COMPLETE BLACKNESS VISUAL ACUITY IS NIL, BUT OBJECT CAN BE SEEN AS A DIM SHAPE WITH NIGHT EYES. IF STARED AT IT WILL DISAPPEAR FROM VISION



NEWS

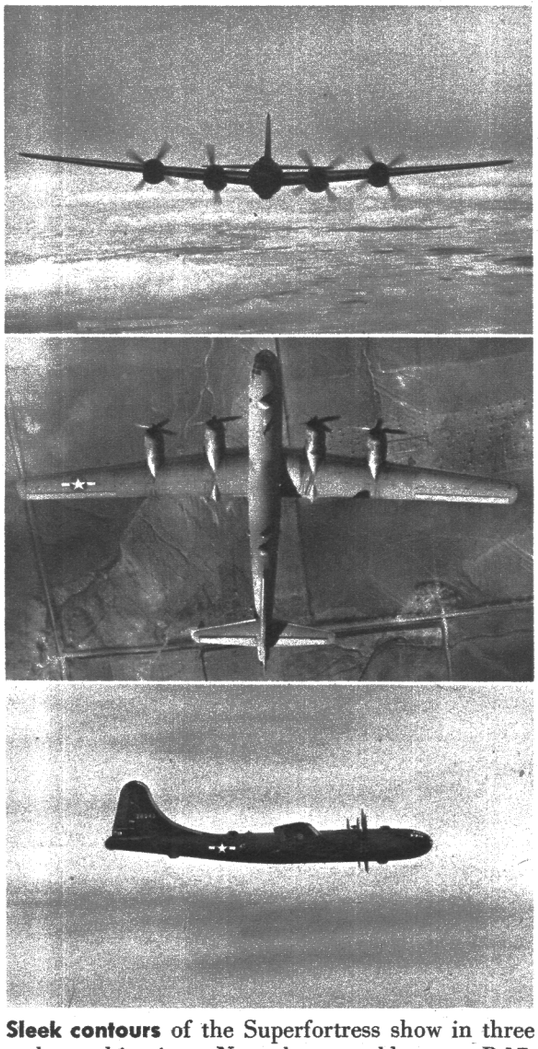
B-29

Great bomber forecasts future

The B-29 is a lot of airplane. It has a greater range, bomb load and speed than any previous heavy bomber. A B-25 could be parked under each giant wing; the tailplane has a span two feet greater than a P-47. Its 98-ft. fuselage stretches two and half times the length of a standard American freight car. The huge Fortress-style fin and rudder rises nearly 28 ft.

Aerodynamically, the Superfortress is clean. Where refinements have been tacked on to our present operational types, they have been built into the B-29. The four remotely controlled turrets and the glassed-in blisters for the gunners make only slight bumps on the smooth cylindrical fuselage. The 56-in. wheels of the tricycle undercarriage fold completely into the fuselage and inboard nacelles.

With its great range, the B-29 will be able to carry U. S. precision bombing to Axis-held territory that has been hitherto untouched. On shorter runs, its effective bomb load can be enlarged to give each sortie a shattering weight of destruction.



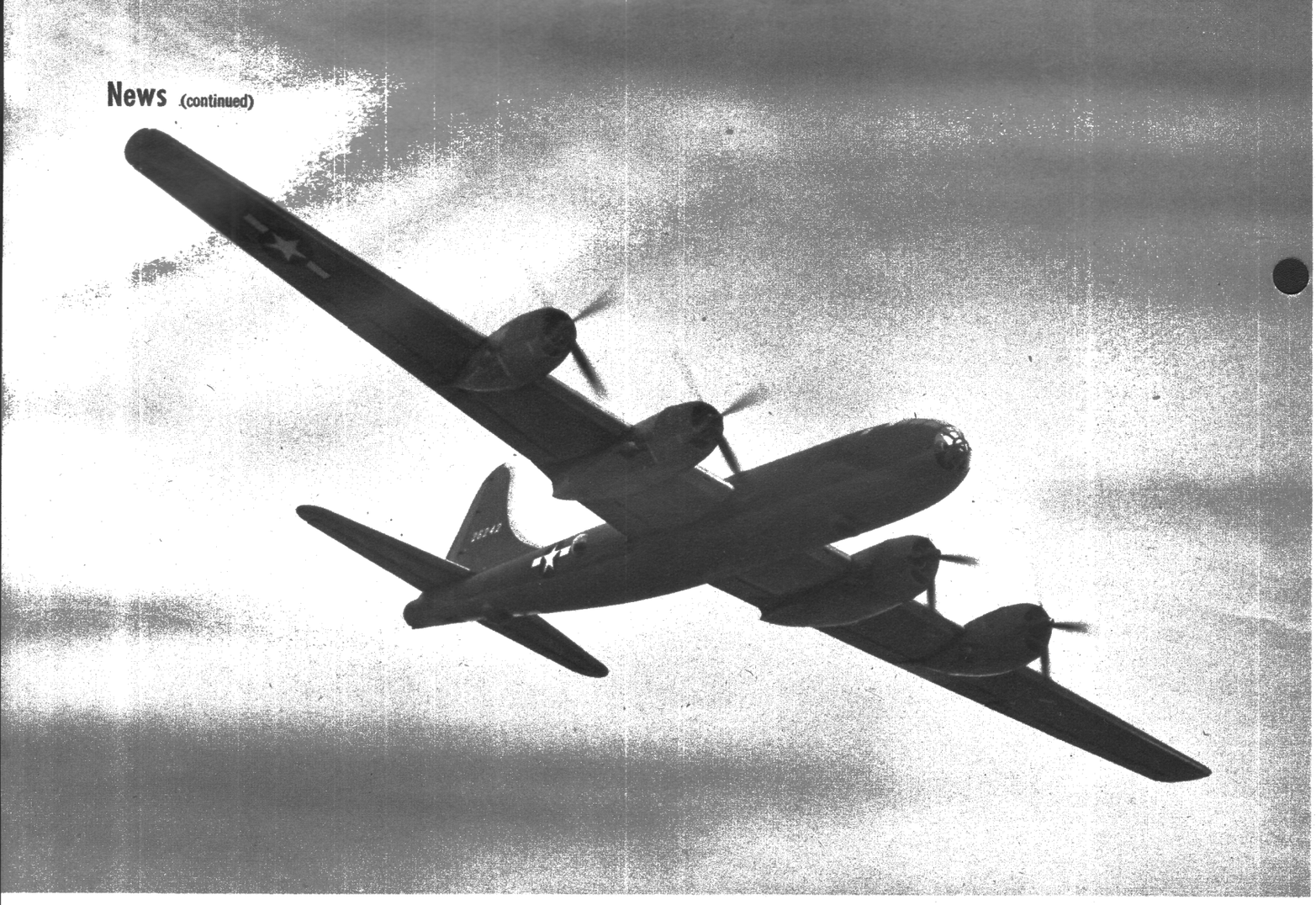
Sleek contours of the Superfortress show in three orthographic views. Note the resemblance to B-17.



OVER PEACEFUL KANSAS, WORLD'S LARGEST BOMBER SPREADS ITS 141-FT. WINGS. FOUR FAT



NACELLES HOUSE THE GREAT TWIN-ROW RADIAL ENGINES WHICH POWER THE FOUR-BLADED PROPELLERS. THESE DRIVE THE BIG PLANE AT WELL OVER 300 M.P.H.



Long tubular nose balances the B-29's heavy-looking fin and rudder. This is one of the features which help distinguish the Superfortress from its Boeing predecessors. The inner engine nacelles are longer, project well beyond the long narrow wing's straight trailing e

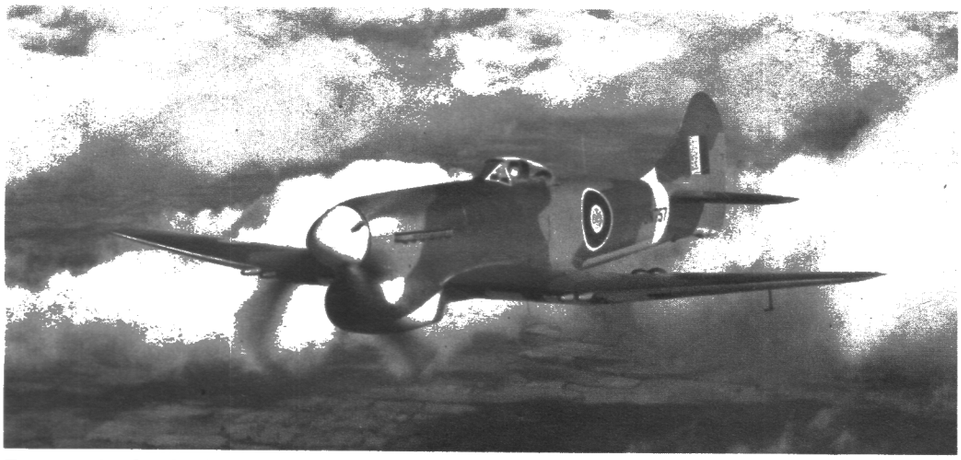


ALLIED AIRPLANES

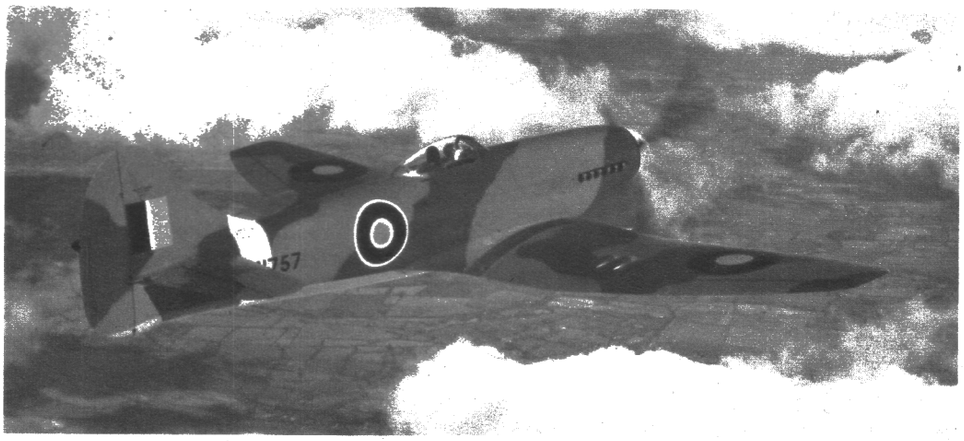
New and modified aircraft

Here are the first pictures of Britain's important new Tempest V (*right*). Little can be revealed about it, but with the 2,220-hp. Napier Sabre engine, this latest Hawker fighter looks like a very hot airplane. Picture below is the P-47D-25 series, a more smoothly streamlined model of this outstanding U. S. fighter.

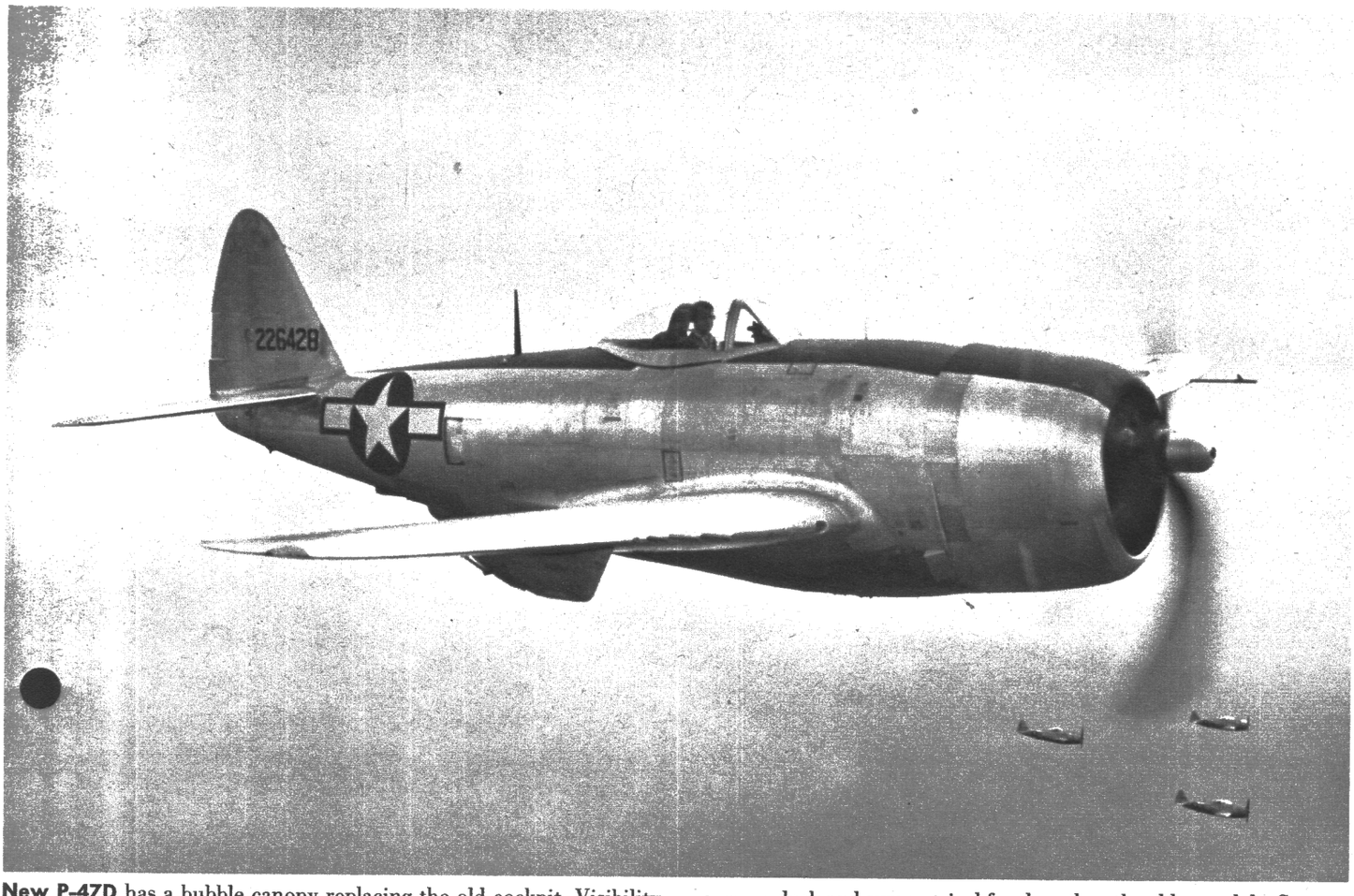
Recent improvements on three other top-flight U. S. aircraft are shown on the next two pages, including the long-range P-51D and the B-24H with new nose and tail turrets. In the new B-25 versions, our Air Forces follow customary World War II practice of turning out variations on standard types to meet new demands of the air war. Besides the super-armed attack B-25H (14 machine guns, 75-mm. cannon) shown in the pictures, there is a later model, the J. This is a straight medium bomber version with glassed-in nose; carries 13 machine guns but no cannon.



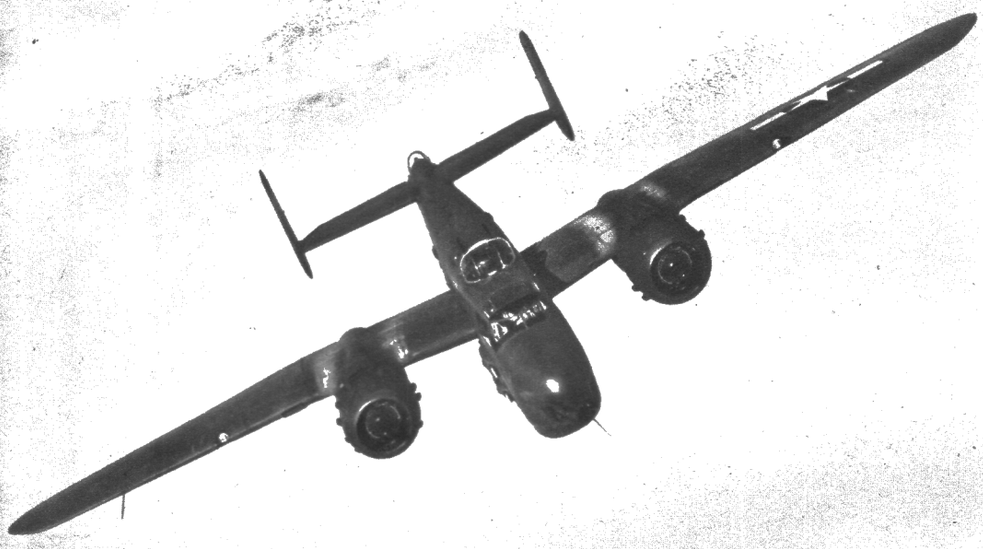
Tempest V clearly shows Typhoon ancestry. Large bulge below the nose houses Napier Sabre engine's radiators. Moderate outboard dihedral starts at midwing; inboard section is straight.



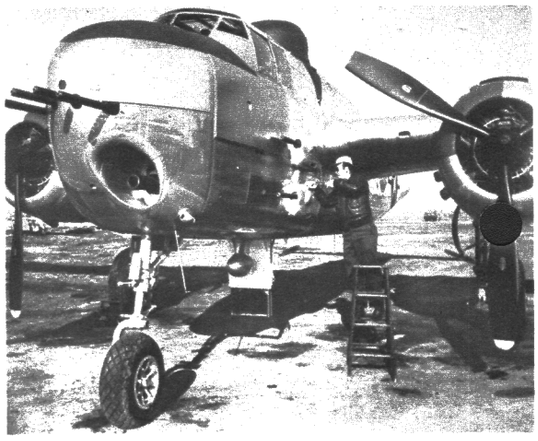
Rudder is rounded, while fin fairs into fuselage. In plan view, the wing looks elliptical. Inboard panel is slightly tapered, outboard panel is curved, with more pronounced curve on trailing edge.



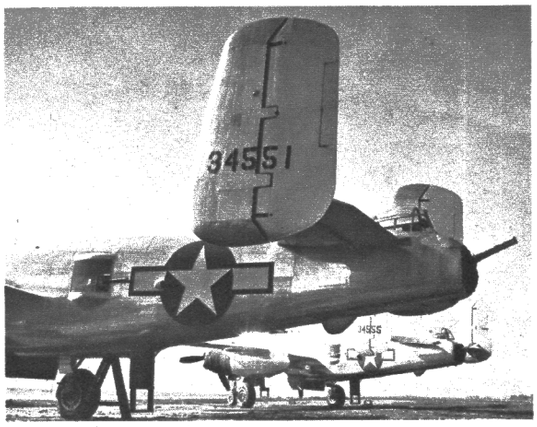
New P-47D has a bubble canopy replacing the old cockpit. Visibility is improved, and the unbroken dorsal line gives the P-47D-25 series a more sleek and symmetrical fuselage than the older models. Streamlined rack for bombs or extra fuel tanks can be seen below the wing.



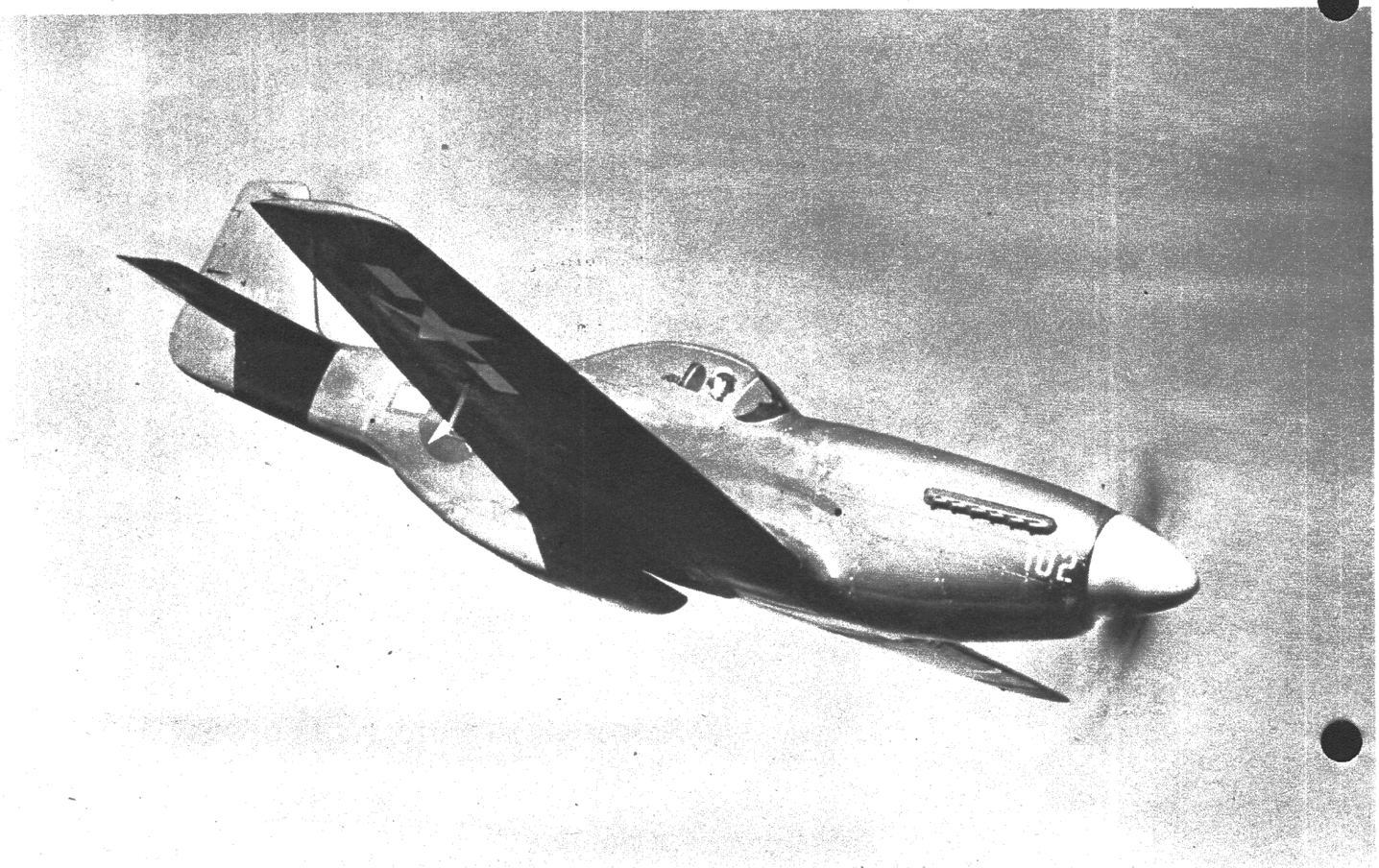
Heaviest armed plane is the B-25H which carries a 75-mm. cannon and fourteen .50-cal. machine guns. Dorsal turret has been moved forward to just behind the cockpit.



"Flying 75" is augmented by four machine guns in nose and two package guns mounted on either side.



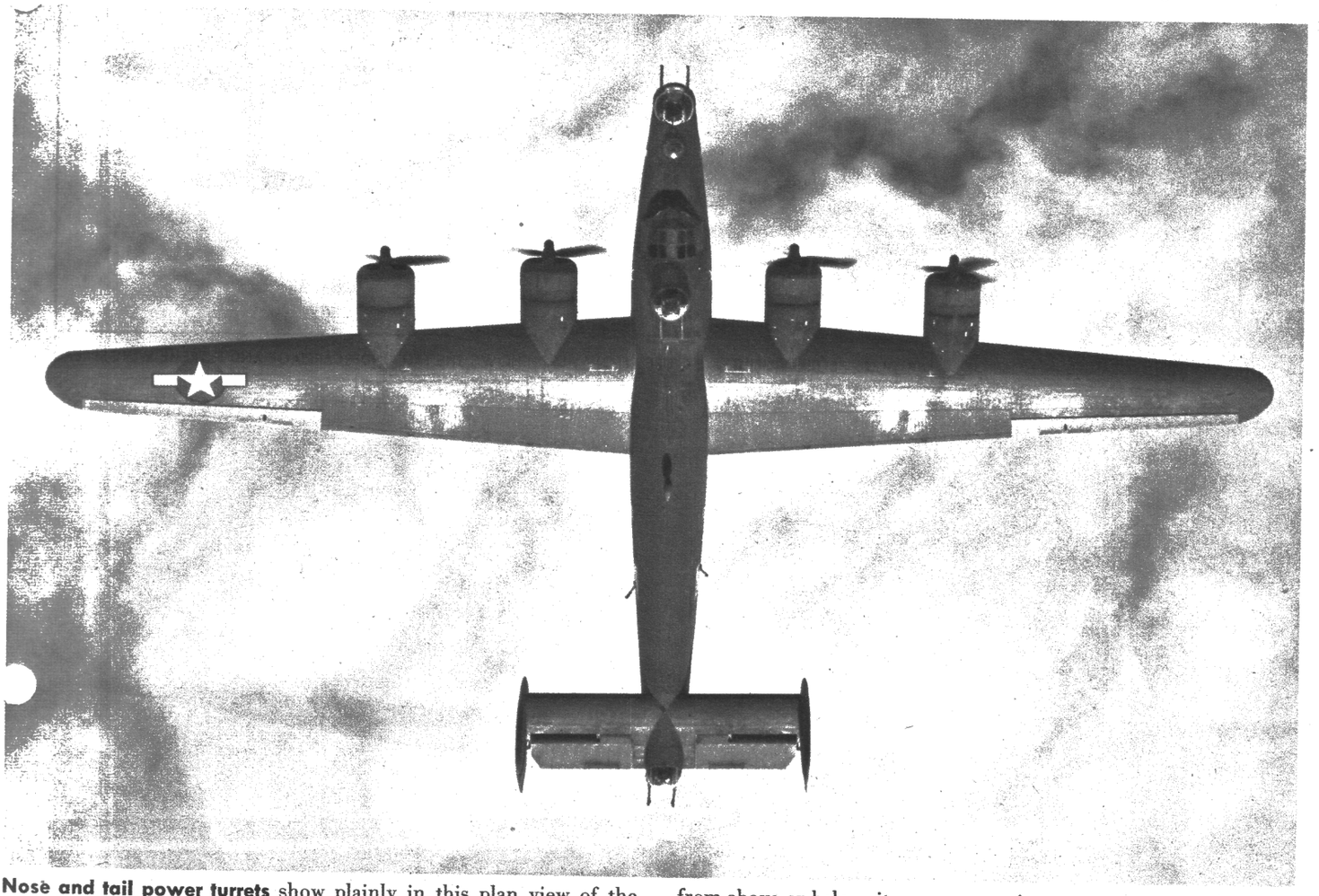
Raised blister of tail gunner's position appears on H and J models. Note waist guns behind the wings.



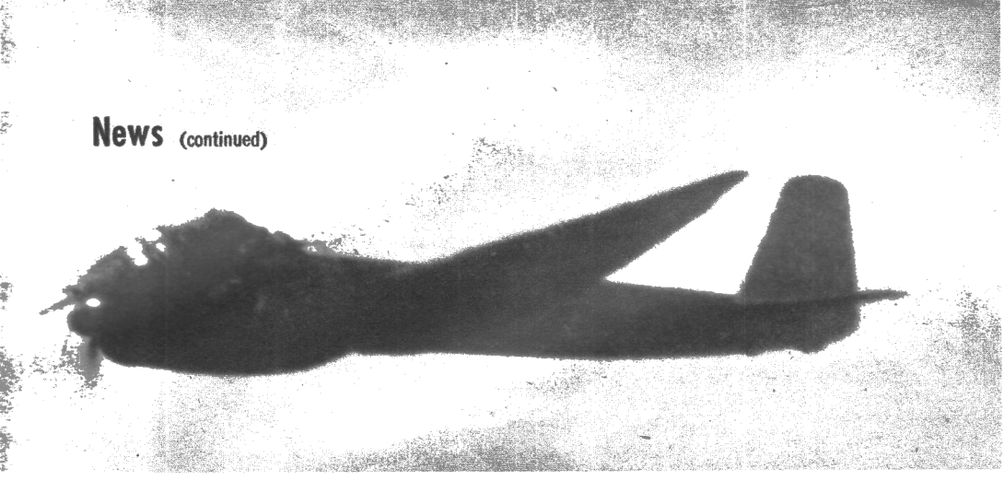
Latest Mustang is the P-51D. This is an improvement on the famed P-51B now operating over Germany. The most conspicuous change is the bubble canopy which is raised above the straighter, smoother top line of the fuselage. Like the P-51B, it has airscoop below the nose.



Latest Liberators are the H and J models. Their better-arranged armament has not altered the plane's basic appearance. Long narrow Davis wing, heavy boxcar fuselage, big broad fins and rudders rounded at top and bottom are the B-24's most important recognition features.



Nose and tail power turrets show plainly in this plan view of the B-24H which also carries retractable Sperry ball turret in belly. Seen from above or below, its very great wing span contrasts with the relatively short fuselage. This is also true of the cargo version, C-87.

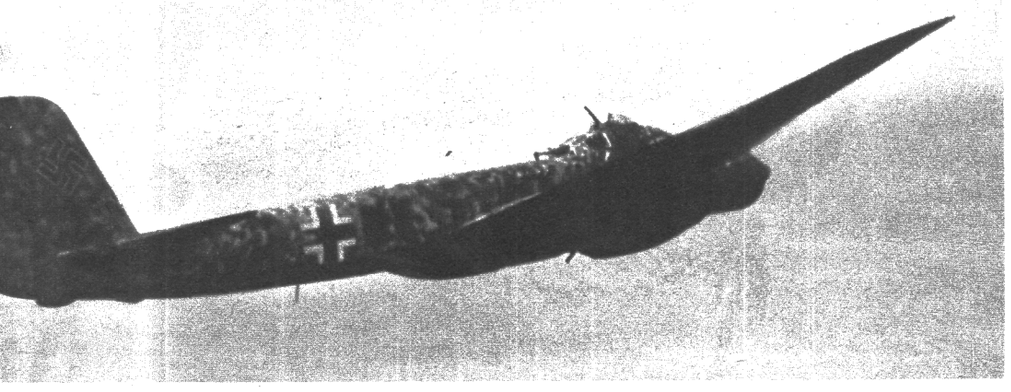


WING REMAINS LOW, IRREGULAR IN SHAPE, BUT WITH MORE POINTED TIPS THAN JU-88, AND 6 FT. LONGER

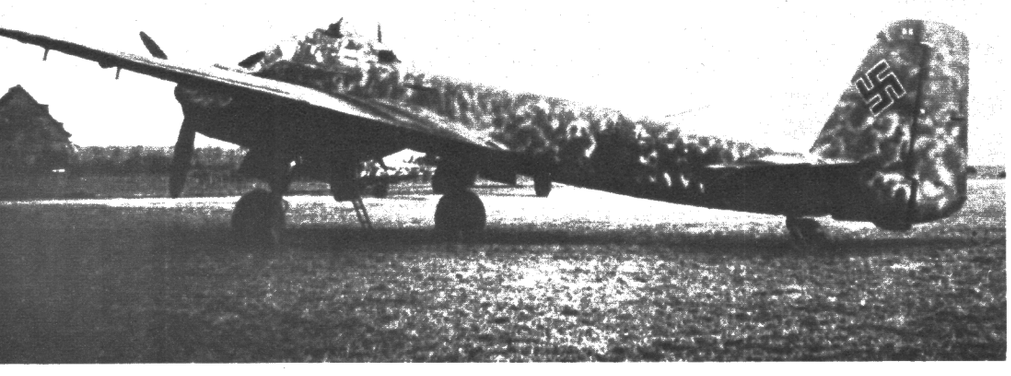
JU-188

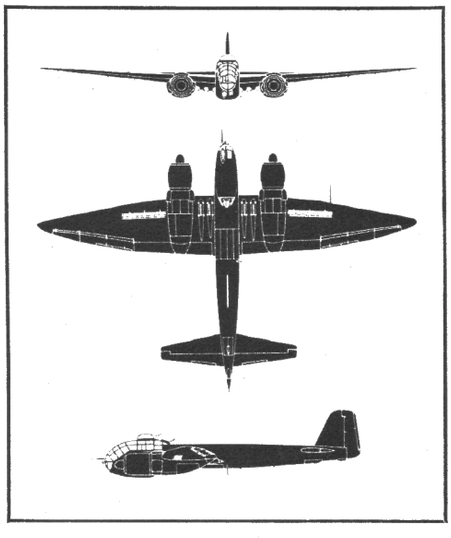
New medium bombs England

Germany's newest medium bomber, the Ju-188, has played a major role in the latest raids over England. Although developed from the familiar Ju-88, this latest Junkers is far more than a sub-type of the older bomber. Drastic changes in wing, nose and tail assembly have greatly improved the all-around flying and combat qualities. The added horsepower of its BMW-801, 1,600-hp. engine gives the 188 nearly 50 m.p.h. more speed than the 88A series. The maximum bomb load is greater by at least 1,000 lb. Armament is rearranged but not increased; the new bomber mounts a 20-mm. cannon in the nose, single guns in dorsal turret and rear cockpit, and twin guns in the belly. Intended as a general-purpose bomber, the Ju-188 is designed to carry large and varied external loads, and is fitted with dive-brakes.

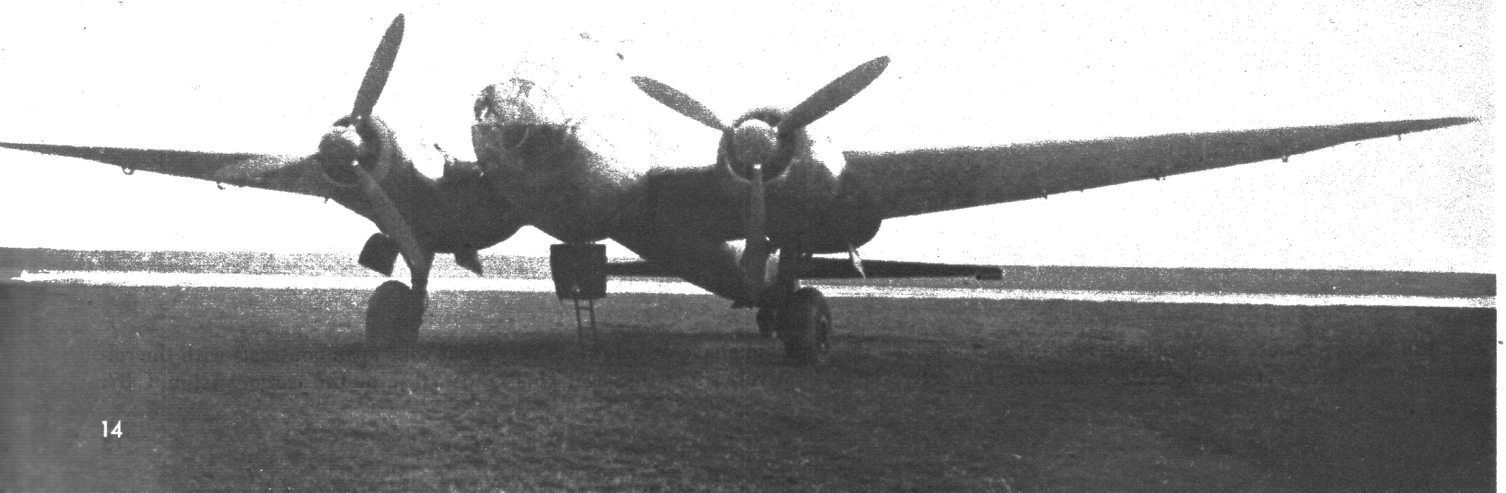


HIGH, ANGULAR FIN, RUDDER SITS ATOP LONG THIN FUSELAGE OF TWIN-ENGINE JU-188 (ABOVE, BELOW)

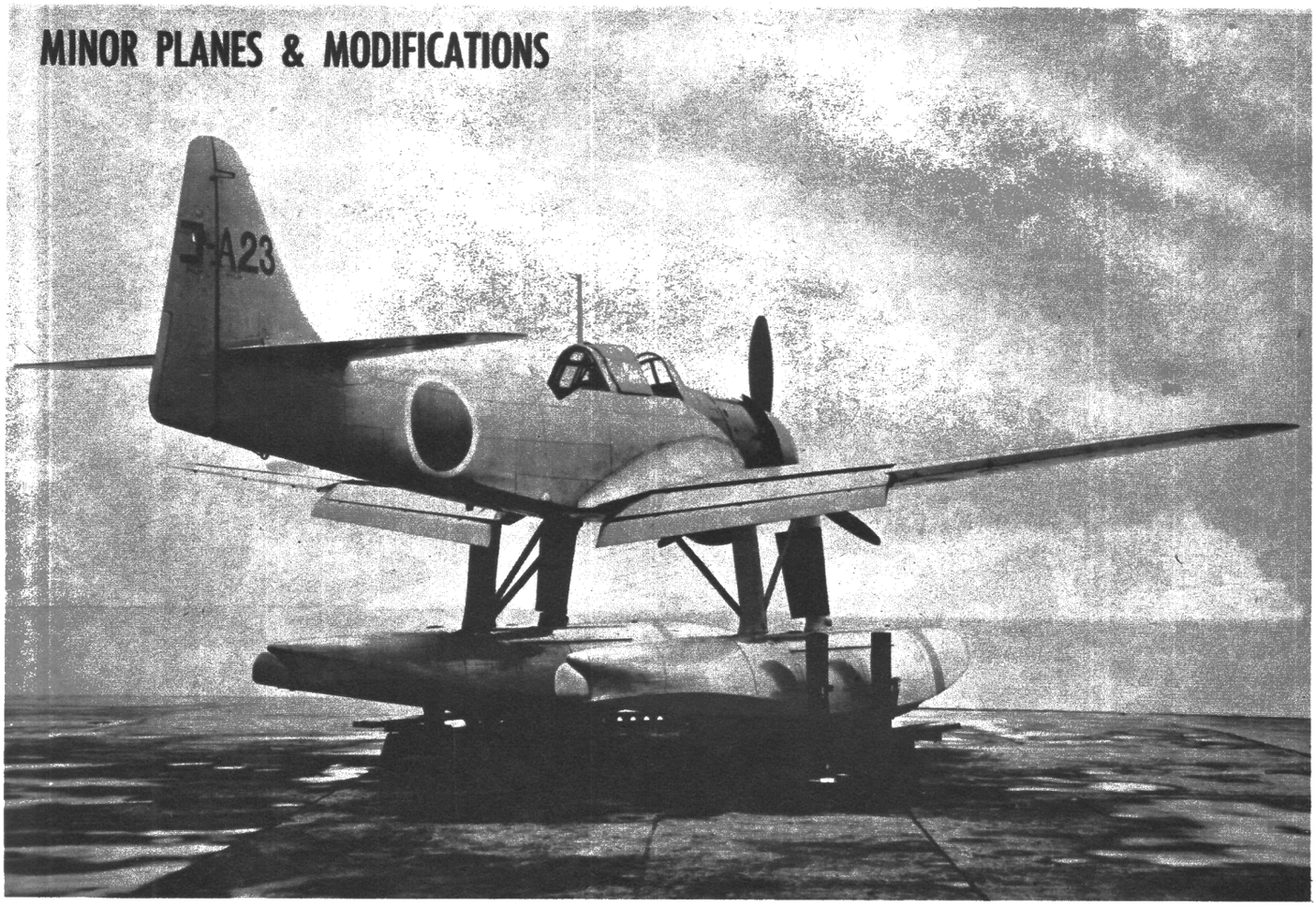




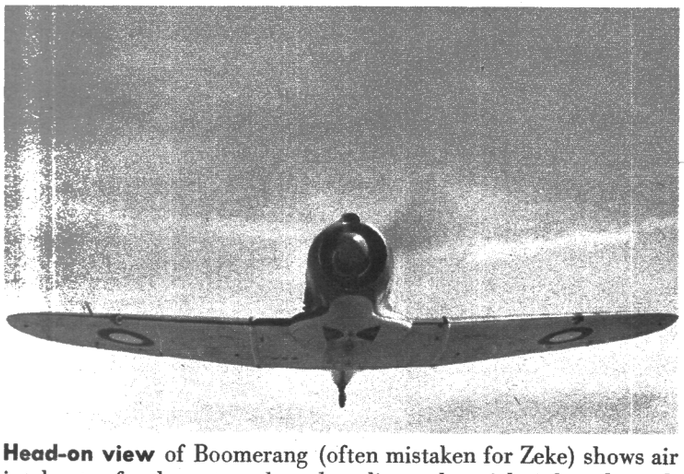
SMOOTHLY ROUNDED, GLASSED-IN NOSE OF JU-188 GIVES BETTER VISIBILITY. PICTURE BELOW ALSO SHOWS THE TALL UNDERCARRIAGE AND EXTREME WINGSPREAD



MINOR PLANES & MODIFICATIONS



An experimental model of a new Japanese two-place twin-float plane is shown on edge of ramp. Called Experimental 14, it is intended for reconnaissance but can also be used as a divebomber. Its maximum speed is 278 m.p.h. Span, 42 ft., length, 35 ft. 7 in.



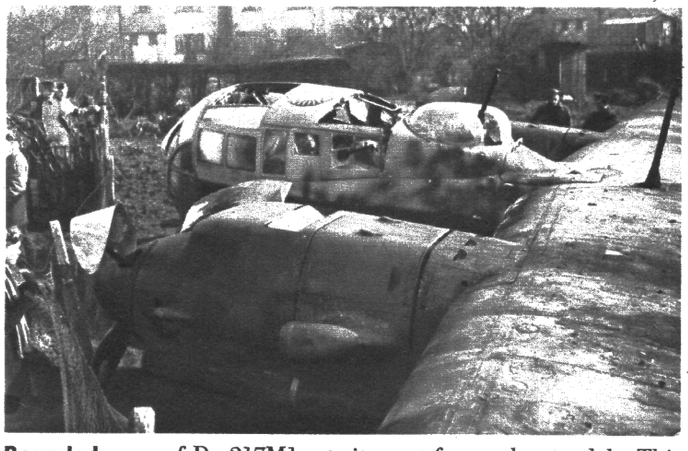
Head-on view of Boomerang (often mistaken for Zeke) shows air intake atop fuselage, pear-shaped cowling and straight inboard panel.



Swept-back wing and stubby fuselage distinguish Australian Boomerang. Fin and rudder and tailplane are rounded on trailing edge.



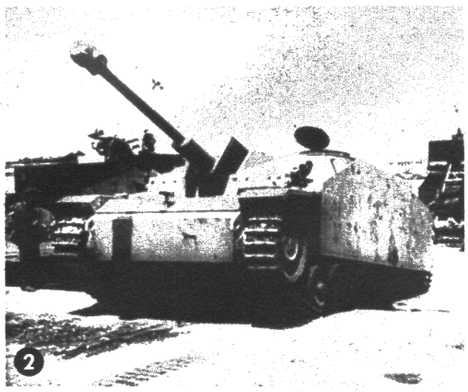
B-17's new "cheek guns," in side positions, together with the chin turret, give protection to the big bomber's nose from angle attacks.



Rounded nose of Do-217M1 sets it apart from other models. This late Nazi bomber was shot down during desperate raids on London.

QUIZ NO. 2: ALLIED AND NAZI ARMOR


1

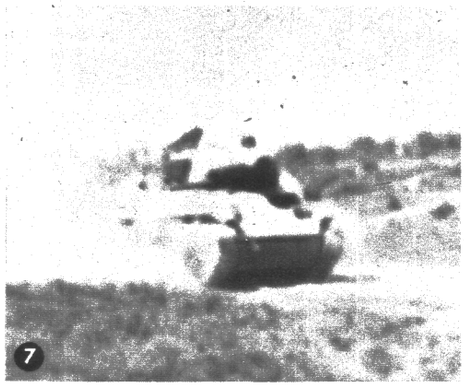

2

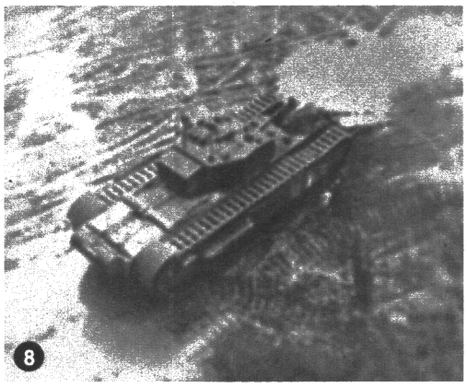

3

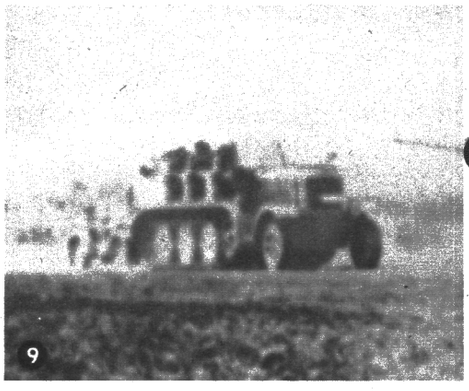

4


5


6


7

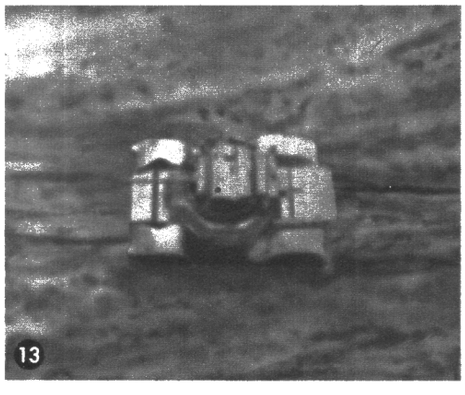

8

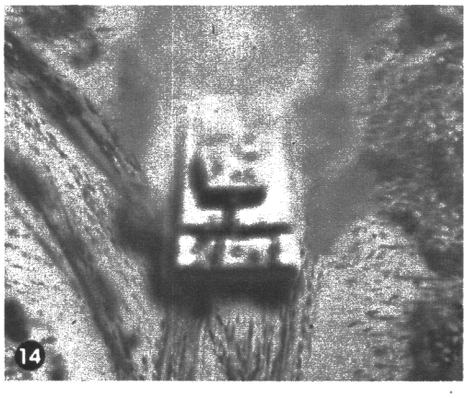

9

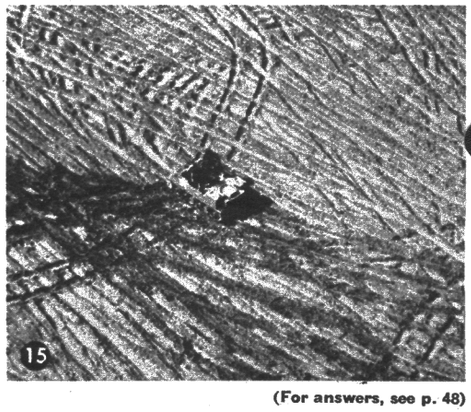

10


11


12


13


14


15

(For answers, see p. 48)

TANKS

Mediums are war development

The medium tank has proved to be one of the most important developments of this war. It is the tank employed in greatest numbers; the most versatile and useful of armored vehicles. Today, the medium tank is fast, rapid-firing, hard-hitting.

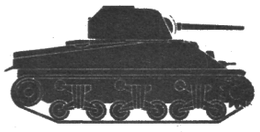
In the first issue of the *Journal* we described the principal medium tanks. Now we point out structural and recognition variations in the latest models. One, the British Crusader, has been replaced by more powerful Cromwell. Others have had radical changes dictated by tough battle experience.

The U. S. began the war with the M-3 General Grant, a tank handicapped by the limited traverse of its 75-mm. gun. It was followed by a series of models of the M-4 General Sherman. Some of these had cast and some had welded hulls. Latest versions, now seeing action in Europe, have welded hulls and, in some cases, mount a larger weapon than the standard 75-mm. gun.

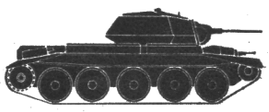
The successful Russian T-34 design has influenced the construction of tanks of other nations, especially the British Cromwell and the German Panther. The Cromwell borrowed the T-34's broad, low silhouette; the Panther adopted its long, sloping bow, and its turret shape. A study of the medium tank silhouettes below shows clearly different national characteristics.



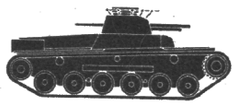
Four Russian T-34 medium tanks wind their way down a hillside. Because of the T-34's low silhouette, those in the distance are hard to distinguish. Germans admire this tank.



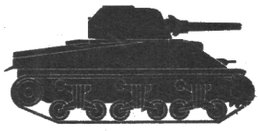
U.S. MEDIUM TANK M-4



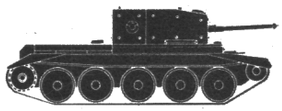
BRITISH CRUSADER TANK



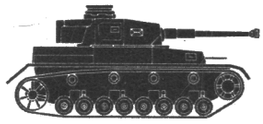
JAP MEDIUM TANK 2597



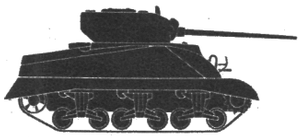
U.S. M-4 WITH 105 HOW.



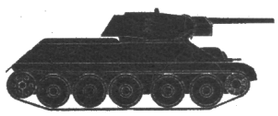
BRITISH CROMWELL TANK



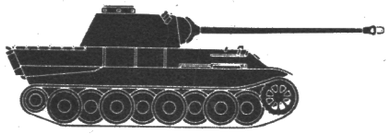
GERMAN PzKw MARK IV



U.S. M-4 WITH 76-MM. GUN



RUSSIAN T-34



GERMAN PANTHER

GENERAL SHERMAN M-4 WITH 75-MM. ARMAMENT IS THE STANDARD AMERICAN MEDIUM TANK. ITS TURRET IS LARGE AND ROUNDED; HULL, ANGULAR BUT STREAMLINED



Short, fat assault gun on the Sherman tank is a 105-mm. howitzer. Long-barreled gun below is a high-velocity 76-mm. which calls for a bigger turret with roomier fighting compartment, larger hatches.



ALLIES' TANKS ARE AMONG BEST OF WAR

The mediums have many hard-hitting features



Russian infantry makes its attack in the wake of several T-34's. The armor of these tanks slopes on all sides; the general impression created by the hull with new heavy turret is that of impressive strength.

FAST BUT LIGHTLY ARMORED, THE CRUSADER FOUGHT IN NORTH AFRICA, HAS TAUGHT THE BRITISH MUCH THAT THEY HAVE INCORPORATED INTO THE CROMWELL

After a late start in the development of tank warfare, the Allies have progressed rapidly. Their greatest achievements have been with medium tanks; the battle-scarred Russian T-34, the U. S. M-4, and the brand new British Cromwell. All three tanks are outstandingly good designs—the result of trial-by-fire development.

The U. S. M-4 General Sherman is pictured here with three different main weapons; the standard 75-mm. gun, a 105-mm. howitzer, and a high-velocity 76-mm. gun which is mounted on an enlarged turret. The Russian T-34, at bottom of the page, also appears with a larger turret, one which is very similar to that on the Russian heavy tank, the KV-1. From the obsolescent British Crusader (*above*) to the Cromwell (*lower right*) the trend of design toward increased armor, armament and lower silhouette is striking.



British Cromwell tank is unique-looking with its low, flat-topped hull and straight-sided, heavily-bolted turret. Its six-pounder main gun is the heaviest British tank armament. Suspension resembles T-34's.



New turret to hold T-34's long-barreled 76.2-mm. gun has bulging "cheeks" on either side of gun mantlet. T-34 has a long sloping bow and broad tracks. Five double bogie wheels are large and dish-shaped.



AXIS MEDIUM TANKS

Germans add to armor plate, launch new tank

The German genius for armament design produced an excellent medium tank in the PzKw IV which outfought Allied armament in the Libyan Desert. The Mark IV began the campaign with a short-barreled 75-mm. main weapon, gradually changed to a longer version with a higher velocity. Pictures from the Italian front show a new silhouette caused by the use of spaced armor which is hung from the sides of the hull and extra turret armor bracketed around the turret wall. Apparently increased Allied firepower has made it necessary for the Germans to give added protection to the vital area of the suspension system. The added armor surrounding the turret is clearly to reduce the effectiveness of Allied shells by causing them to explode before piercing the turret wall.

Proof that the Germans think highly of the medium tank is the fact that they have just built a new one, the PzKw V, the Panther, which has still greater firepower and heavier armor. Alongside the more formidable weapons of Germany and the Allies, the Jap medium tank 2597 appears outclassed. This model was introduced in 1937 and was used to a limited extent in China and in the early Burmese campaign. However, the Japs have already made tanks with a high power-to-weight ratio and may produce some fine new models.

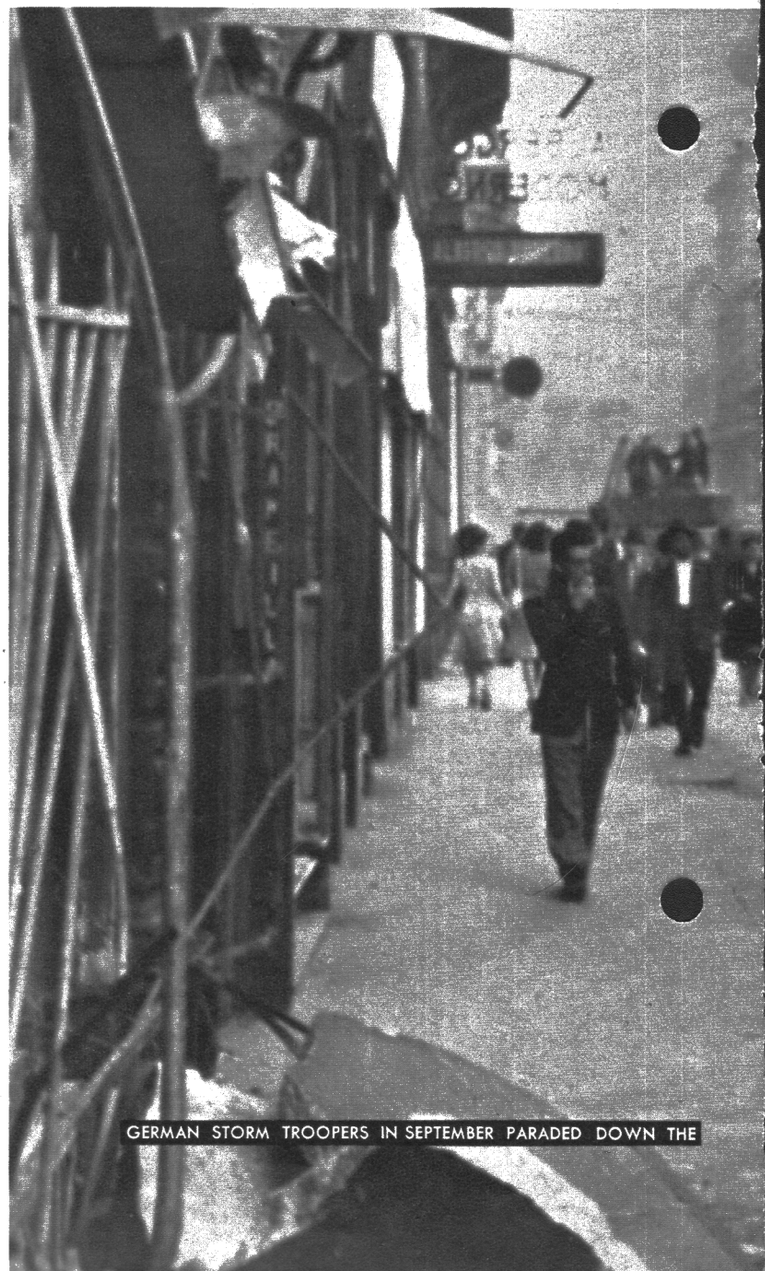


Interesting view of the German Mark IV shows how the armored side skirting, attached to brackets, hangs away from the hull. Notice how extra turret armor stands away from turret, curves toward mantlet.



Jap medium tank 2597 head-on looks like U. S General Grant with off-center turret. Gun shown is a low-velocity 57-mm. Hull is long, narrow and low. Light track (*see below*) has six medium bogie wheels.





GERMAN STORM TROOPERS IN SEPTEMBER PARADED DOWN THE



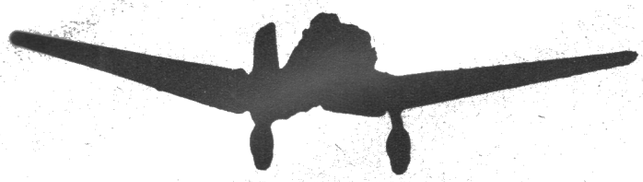
Prominent armored skirting on Mark IV conceals and protects hull and suspension system. Turret looks larger in diameter with added armor. Prominent cupola is German feature, as is muzzle brake on gun.



Newest Nazi tank, Mark V Panther, may be copied from Russian designs. It is built close to the ground with sides well sloped; has eight overlapping bogie wheels. The 75-mm. gun barrel is over 18 ft. long.

STREETS OF MILAN, ITALY IN PzKw MARK IV'S. NEW ARMOR AROUND TURRET MAKES IT LOOK LARGER, GIVES TANK APPEARANCE OF MORE POWERFUL, VICIOUS WEAPON

QUIZ NO. 3: PLANES HEAD-ON—LARGE



1



2



5



6



9



10



13



14



17



18

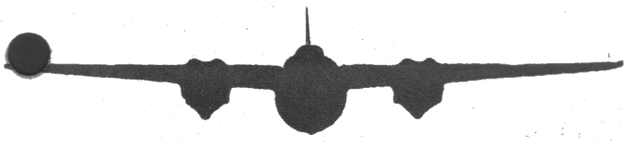


21

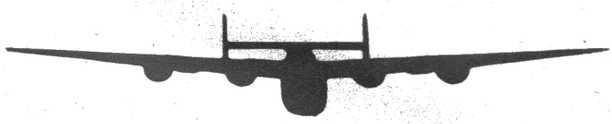


22

ONES ARE EASY, SMALLER ONES DIFFICULT



3



4



7



8



11



12



15



16



19



20

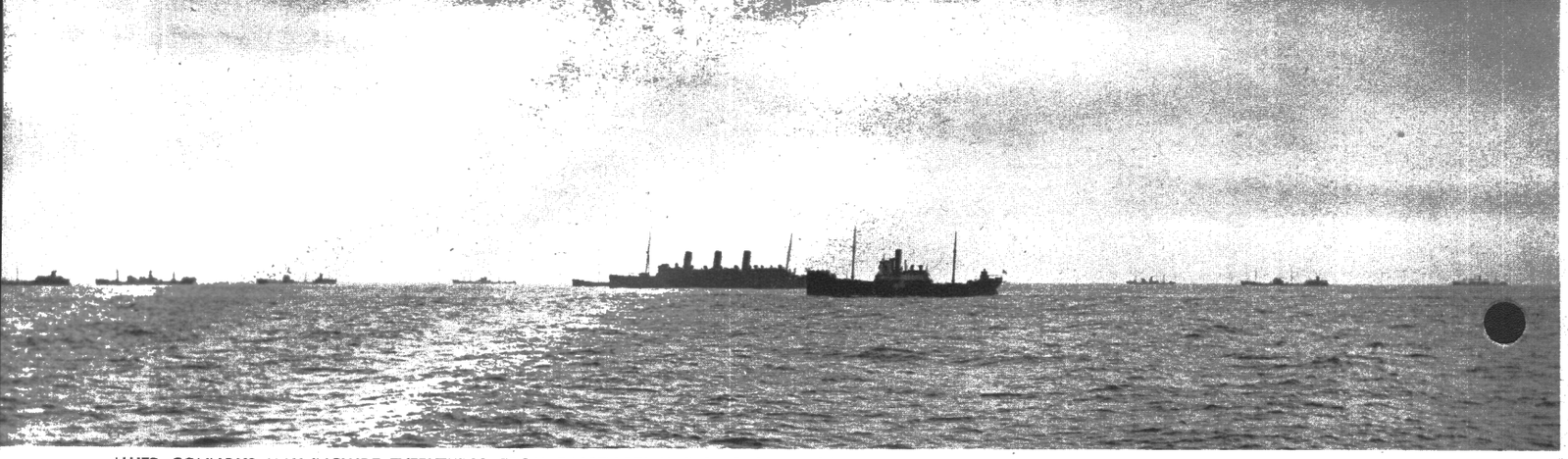


23



24

For answers, see p. 48



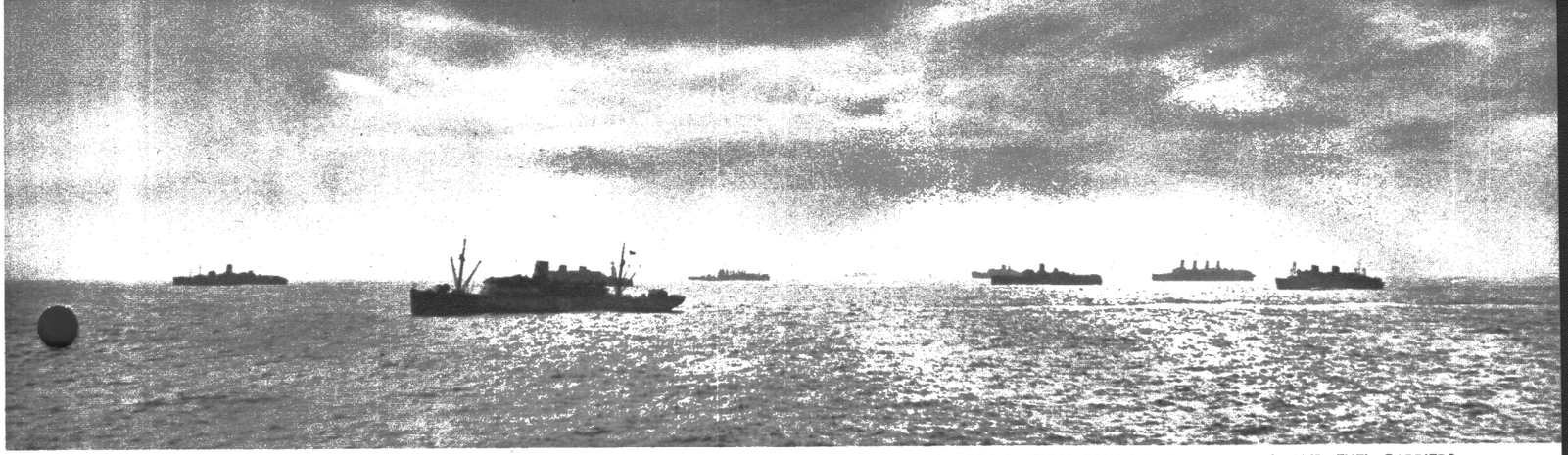
ALLIED CONVOYS MAY INCLUDE EVERYTHING FROM PASSENGER LINERS TO SMALL COASTAL CARGO CARRIERS BUT MOST SHIPS NOW FALL INTO SEVERAL STANDARD TYPES

STANDARD SHIPPING WINS WAR OF SUPPLY

Logistics, the science of supplying warfronts, is the touchstone of military success. As such, the shipment of men and matériel is the biggest business in the world today. To pursue the war to its victorious conclusion, 5,000,000 men must be moved across the oceans of the world. Each requires an initial seven tons of equipment and a steady flow of a ton per man per month to keep him in combat. The North African campaign alone involved the transport of more than 700,000 different items of equipment, many of them in vast quantity. And to our greatly expanded fleets at sea must go commensurate tonnages of fuel, ammunition, food and naval gear.

Although the airplane is the newest form of cargo transport,

AN AMERICAN HEAVY CRUISER OF THE PORTLAND-NORTHAMPTON CLASS LEADS THE BROAD RANKS OF AN ALLIED CONVOY AS ESCORT DESTROYERS RANGE OUT IN FRONT



PASSENGER SHIPS (CENTER REAR AND RIGHT) ARE EASILY IDENTIFIED BY THEIR MULTIPLE STACKS, PROVIDE LESS RECOGNITION TROUBLE THAN CARGO AND FUEL CARRIERS

what it has been able to accomplish so far has been only a spectacular trickle. The need has been and continues to be ships. In September 1939, the combined merchant marine of the Allies amounted to 43,000,000 dead-weight tons. By December 1941, about 25,000,000 tons had been sunk or captured. In 1942 the United Nations built merchant bottoms totaling 11,000,000 tons. Losses for that year amounted to 12,000,000.

But the picture improves. Our defenses have greatly weakened the U-boat threat. England-based planes have smashed at German submarine pens along the Channel coast. Baby flattops and an augmented escort navy make it ever hotter for Nazi underseas fleets. And Allied ship construction has left the rate of sinkings far behind. In America alone more than 2,400 ships have been built since Pearl Harbor and they are still coming off the ways at the rate of five a day. By the end of 1943 American merchant shipping amounted to approximately 28,000,000 dead-weight tons and by the end of this year, the total will be close to 50,000,000.

Merchant vessels have always been an enormous recognition problem, but the nature of most of this new construction makes recognition somewhat easier. Between wars, most ships were built by private venture; each was more or less custom-built. But the war's overwhelming demands for new bottoms make mass production a must. This means standard designs. With study these designs can be as readily recognized as corresponding classes of warships.

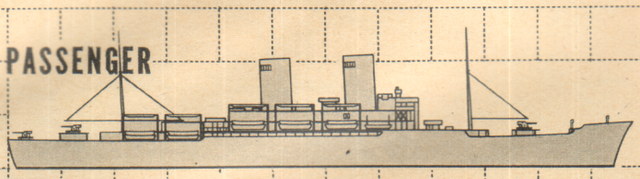
MOST SHIPS PICTURED HERE ARE OF MODERN DESIGN. THEY INCLUDE MANY EMERGENCY TYPES SUCH AS LIBERTY SHIPS AS WELL AS THE STANDARD USMC CARGO TYPES

MERCHANT VESSELS

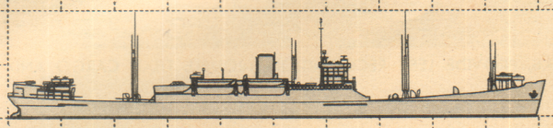
STANDARD U. S. A

AMERICAN

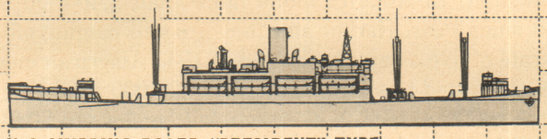
PASSENGER



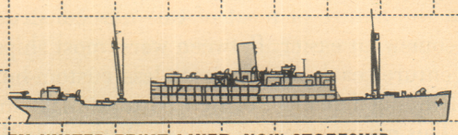
USMC P-1 & P-2 TRANSPORTS



BALTIMORE MAIL "CITY" LINER

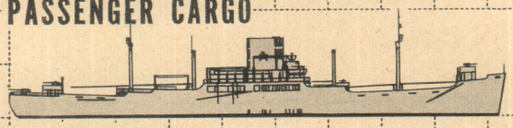


U. S. SHIPPING BOARD "PRESIDENT" TYPE

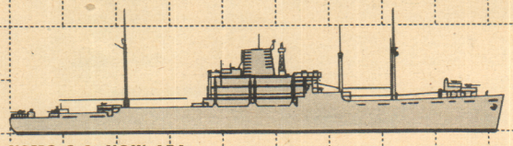


EX-UNITED FRUIT LINER, NOW STORESHIP

PASSENGER CARGO

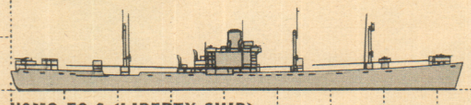


USMC C-3, NOW APA

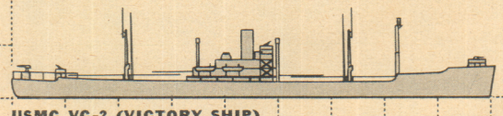


USMC C-3, NOW APA

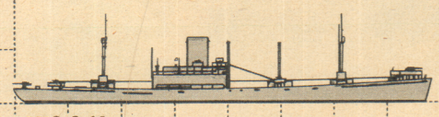
CARGO



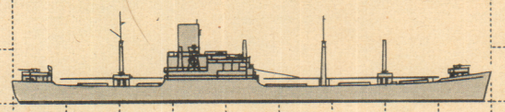
USMC EC-2 (LIBERTY SHIP)



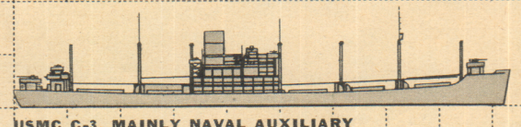
USMC VC-2 (VICTORY SHIP)



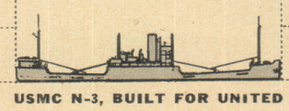
USMC C-1A



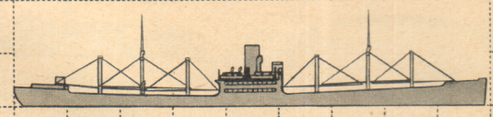
USMC C-2



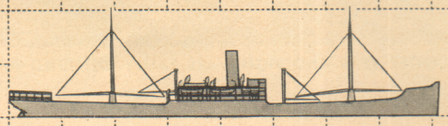
USMC C-3, MAINLY NAVAL AUXILIARY



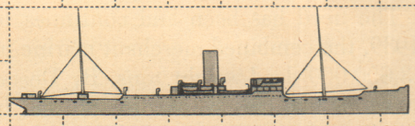
USMC N-3, BUILT FOR UNITED NATIONS



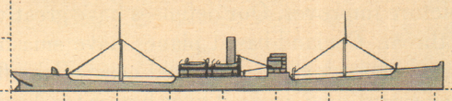
"LUCKENBACH LINE" FREIGHTER



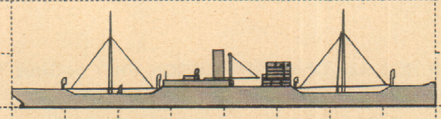
TYPICAL OLD FREIGHTER



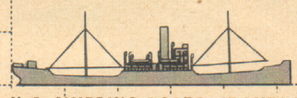
OLD PASSENGER-CARGO TYPE (VISUALLY CLASSED AS CARGO)



U. S. SHIPPING BOARD, "WEST" TYPE

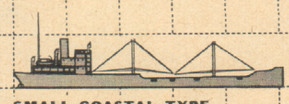


U. S. SHIPPING BOARD, HOG ISLAND TYPE



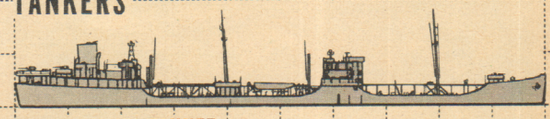
U. S. SHIPPING BOARD, "LAKE" TYPE

ENGINES-AFT CARGO

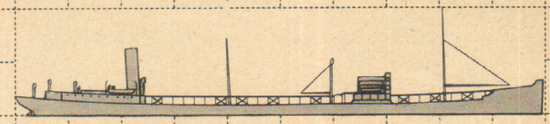


SMALL COASTAL TYPE

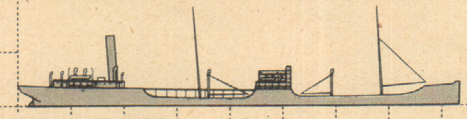
TANKERS



NEWEST NAVY TANKER

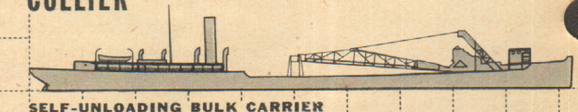


LARGE OLD TANKER



PRE-1930 TANKER

COLLIER



SELF-UNLOADING BULK CARRIER

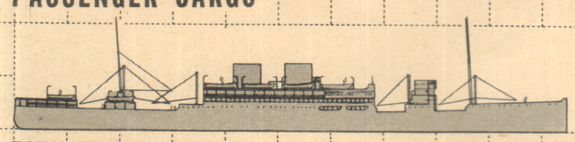
TRAWLER



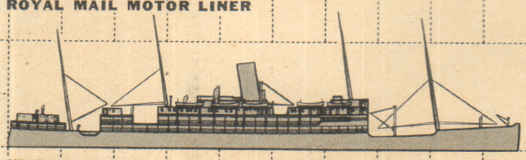
U. S. TRAWLER

BRITISH

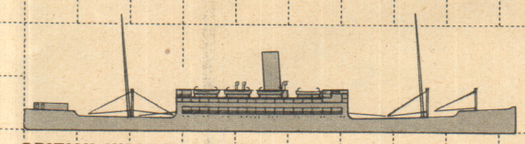
PASSENGER CARGO



ROYAL MAIL MOTOR LINER

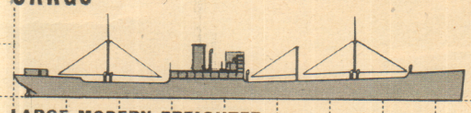


"BIBBY" LINER

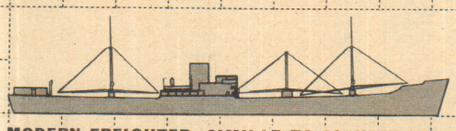


BRITISH INDIA MAIL LINER

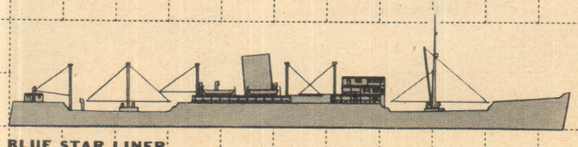
CARGO



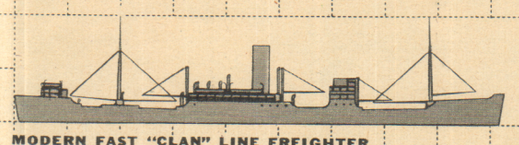
LARGE MODERN FREIGHTER



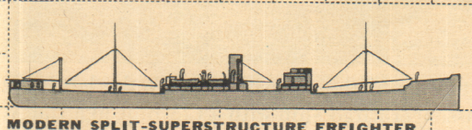
MODERN FREIGHTER—SIMILAR TO SCANDINAVIAN AND JAPANESE



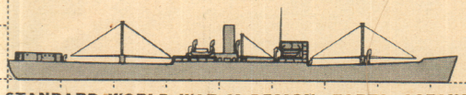
BLUE STAR LINER



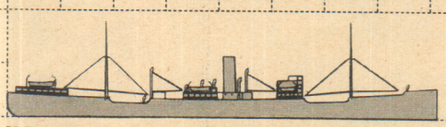
MODERN FAST "CLAN" LINE FREIGHTER



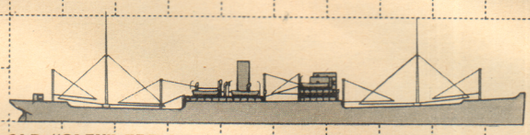
MODERN SPLIT-SUPERSTRUCTURE FREIGHTER



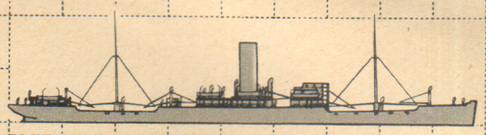
STANDARD WORLD WAR II DESIGN—FORTS, OCEANS, EMPIRES



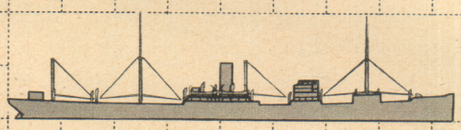
MODERN SPLIT-SUPERSTRUCTURE FREIGHTER



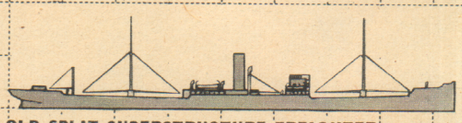
OLD "GLEN" FREIGHTER



BLUE STAR FREIGHTER

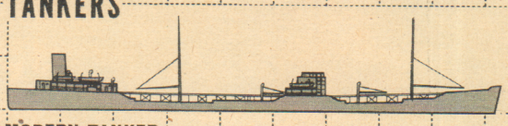


OLD BANK LINE FREIGHTER

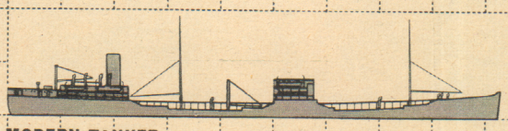


OLD SPLIT-SUPERSTRUCTURE FREIGHTER

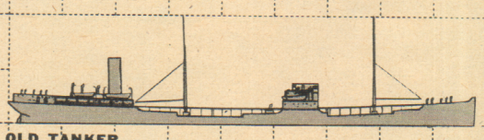
TANKERS



MODERN TANKER

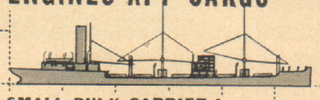


MODERN TANKER

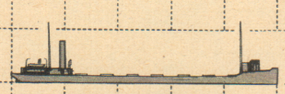


OLD TANKER

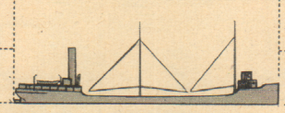
ENGINES-AFT CARGO



SMALL BULK CARRIER 1



SMALL BULK CARRIER 2



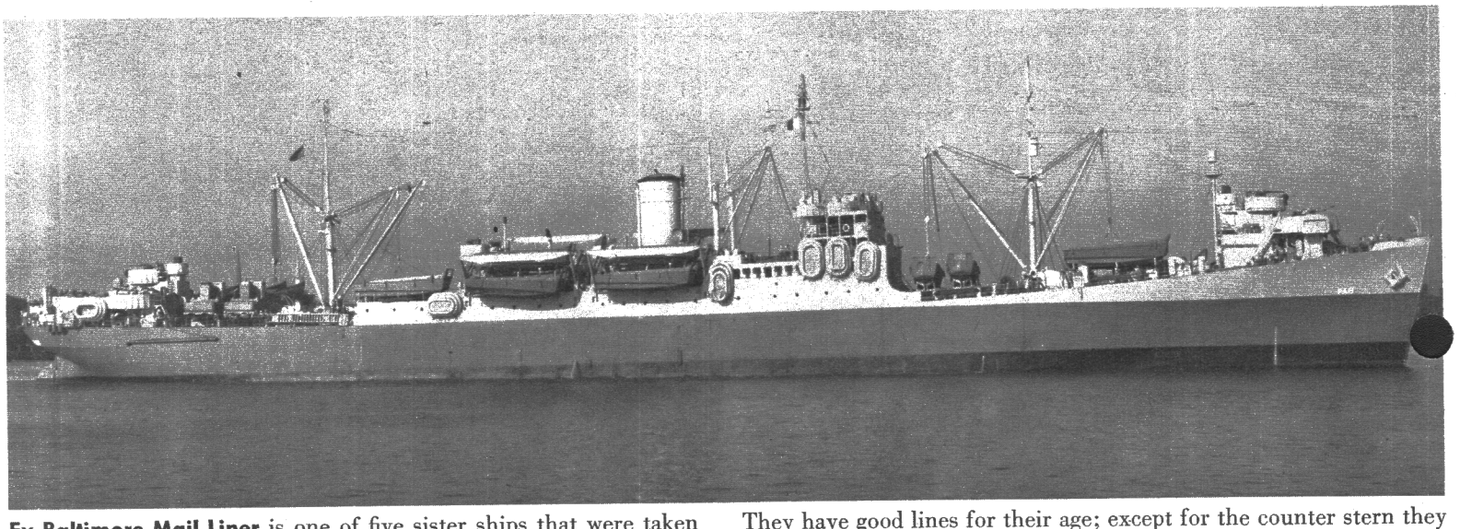
SMALL BULK CARRIER 3

Shown in outline on these pages are 44 U. S. and British merchant ships arranged according to six standard types—passenger, passenger cargo and cargo vessels, tankers, colliers and trawlers. Presented in the January issue of the *Journal* according to function, these types are now broken down even more specifically to enable observers to distinguish them from Axis shipping.

It is impossible to illustrate on a single chart all of the merchant designs now sailing in United Nations convoys. Hence the *Journal* has concentrated on those designs which were built in such quantity as to make their quick recognition essential. With the tremendous wartime need for new ships, concentration on standard designs has become imperative (for example, there are now well over 2,000 Liberty ships). It should be borne in mind that many ship types are common to more than one nation and that nationalities of individual merchant ships often cannot be distinguished. This preliminary concentration on common U. S. and British designs should, however, materially assist students of recognition.

SCALE: EACH SQUARE EQUALS 50 FT.

Near Safi, off the coast of French Morocco, three standard types of U. S. merchant ships lie at anchor. In the foreground is a U. S. Shipping Board transport of the same vintage as the World War I President Liner at the top of the opposite page. To the left is a Maritime Commission passenger-cargo ship with a C-3 hull like the ex-African Comet, also on opposite page. C-3 cargo (*see p. 32*) lies close to shore.



Ex-Baltimore Mail Liner is one of five sister ships that were taken into the Navy in 1940 as attack transports. These former passenger-cargo vessels operated between U. S. ports as early as the last war. They have good lines for their age; except for the counter stern they do not bear the stamp of World War I shipbuilding. It is unusual to find the modern raked bow combined with the old-time counter stern.

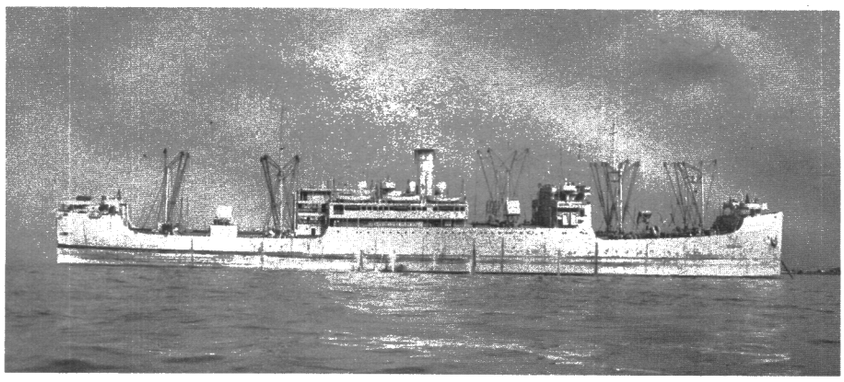
U.S. BUILDS WAR FLEET

In the 15 years between 1922 and 1937, only two dry-cargo freighters and a few tankers and passenger vessels were built in the U. S. When the Maritime Commission was established in 1936, there were only ten shipyards and 46 ways capable of producing large ocean-going ships and of these half were engaged in naval construction. Today the industry employs two million workers at an estimated annual pay roll of six billion dollars.

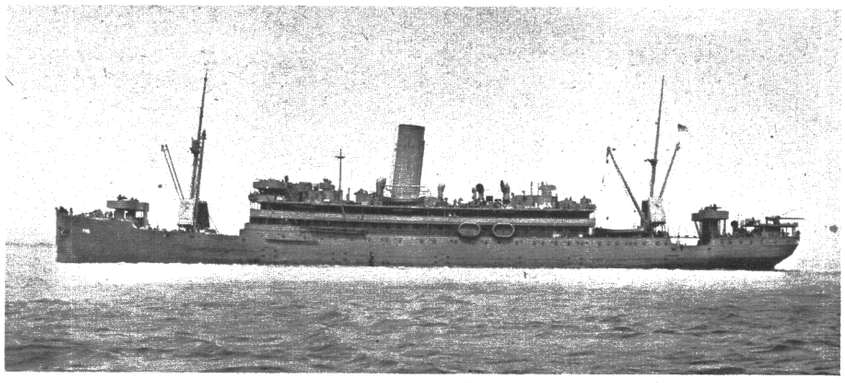
This phenomenal growth has been supervised by the U. S. Maritime Commission which has built thousands of merchant vessels. As more and more ships slide down American ways, USMC ships are becoming the commonest sight in the war's sea lanes.

Numerically most important is the Liberty ship. Adapted from a British tramp, the Liberty is a 10,500-ton, 442-ft. freighter capable of 11 knots. The hull is simplified, prefabricated; the power plant, slow but readily available reciprocating engines. Now coming down the ways is the faster Victory ship. This, too, is mass-produced. Its turbine propulsion will make it much faster, better adapt it to long Pacific runs. The Victory will be much superior to the Liberty for postwar service.

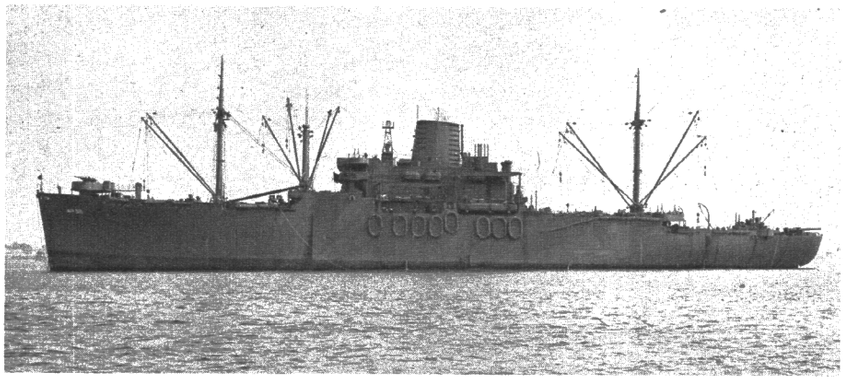
Besides these two mass-produced types, the USMC also has four standard cargo types—the C-1, C-2, C-3 and C-4; two transports—the P-1 and P-2; three tankers—the T-1, T-2 and T-3, as well as tugs, barges, seaplane tenders and auxiliary carriers. Most of these designs go back to the prewar program of the Commission and, although they have more refinements than the wartime types, they also are being built in considerable numbers. With the exception of a few minor vessels, all of these important recognition classes are shown on this and the following pages.



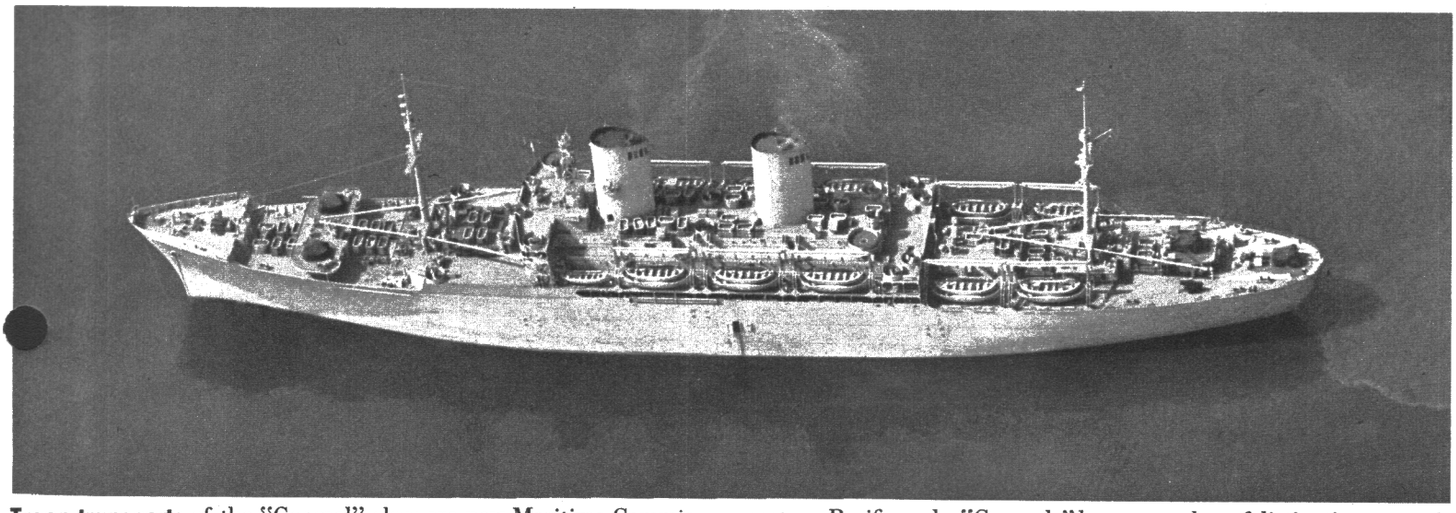
President Liner built by the U. S. Shipping Board is now an Army hospital ship. Prominent well deck, tall stack, plumb bow and stern, and split superstructure are marks of its age, nevertheless it is still sturdy enough to serve in the war effort.



United Fruit Liner represents a large group of fruit and passenger ships that were built in the '20's and earlier for South American trade. Most are now naval store ships, have large superstructure and unusual short well deck abaft the mainmast.



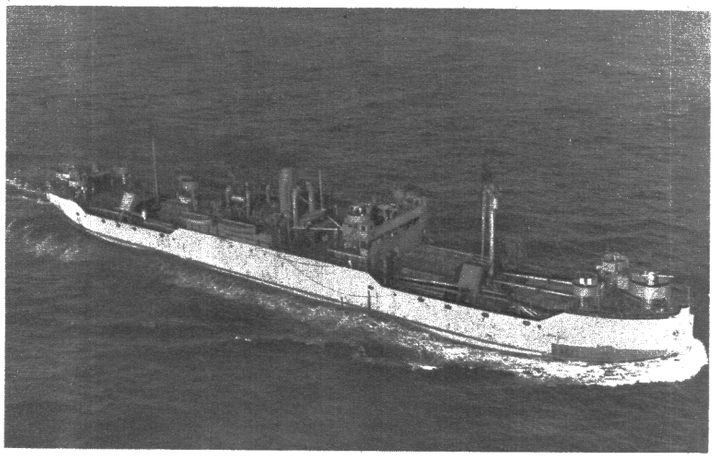
Sleek ex-African Comet was the world's first all-welded passenger liner. A USMC passenger-cargo design, she was built in 1941 on standard C-3 hull for the American-South African Line. This ship has now been refitted as a fast troop transport.



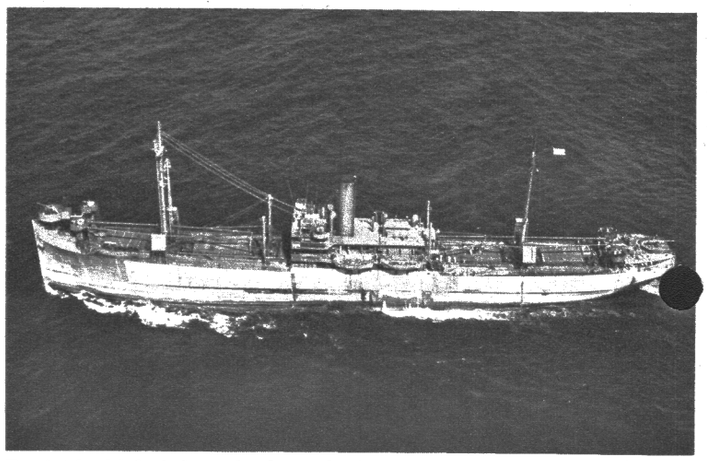
Troop transports of the "General" class are new Maritime Commission P-1 designs that are the equal of any passenger-cargo ships afloat. Fast, economical, comfortable, they will be especially valuable for the postwar Pacific trade. "Generals" have a number of distinctive recognition features, including two very tall, teardrop-shaped stacks; two tall masts; long, stepped-up superstructure; and pronounced clipper bow.

WAR-BUILT LIBERTY AND VICTORY SHIPS

Lying at anchor in Salerno harbor are two U. S. Liberty ships of a convoy which brought in supplies for the invasion forces of the Allies. Prefabricated, mass-produced and launched at the rate of five a day, these cargo wheel horses, over 2,000 of which have been built, are the miracle of shipbuilding in World War II. Liberty ships are easy to recognize by their flush deck, lid-topped funnel, heavy T-shaped

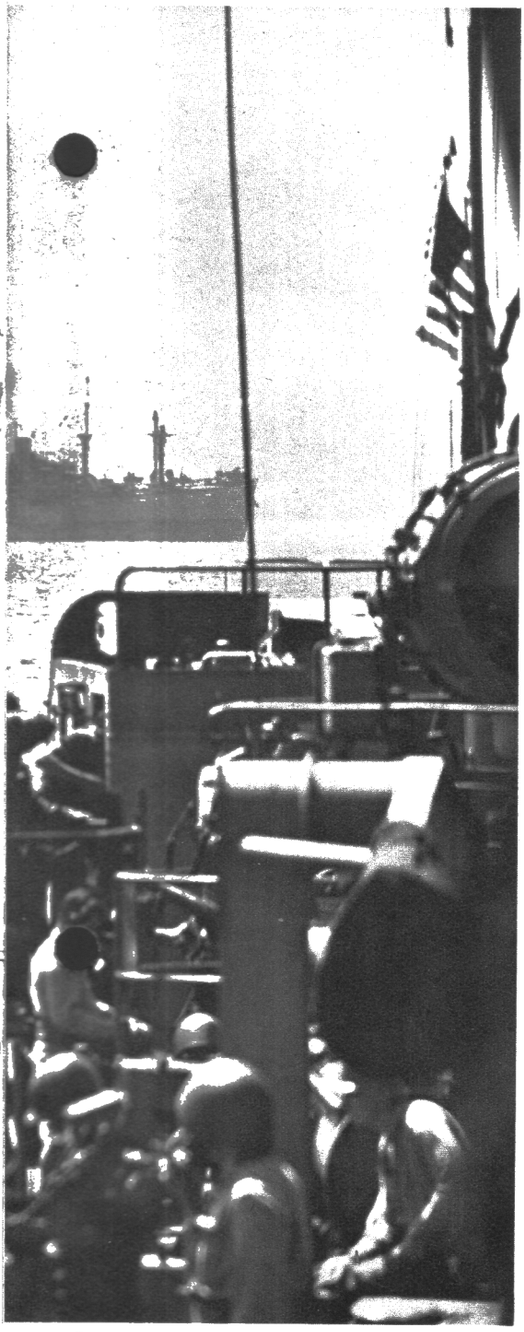


Hog Islander, the Liberty of World War I, once more travels North Atlantic convoy course. Although her straight hull, plumb bow and well deck make her ugly, she is nevertheless a sturdy, and long-lived ship.

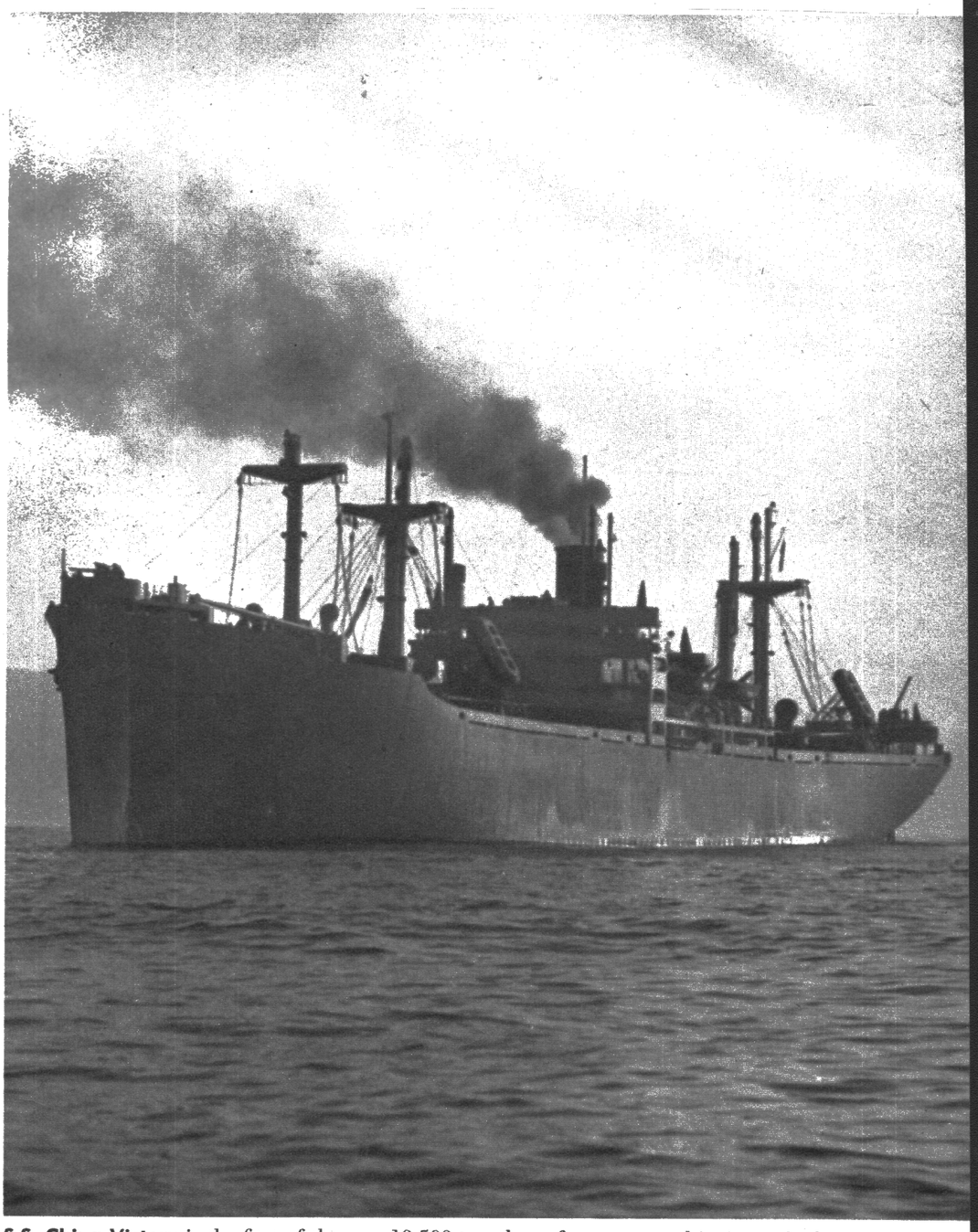


Typical old freighter, built in the last war by the USSB, belongs to the American-Hawaiian Line. It has composite superstructure, raised forecastle, large hatches, and kingposts slightly forward of the bridge.

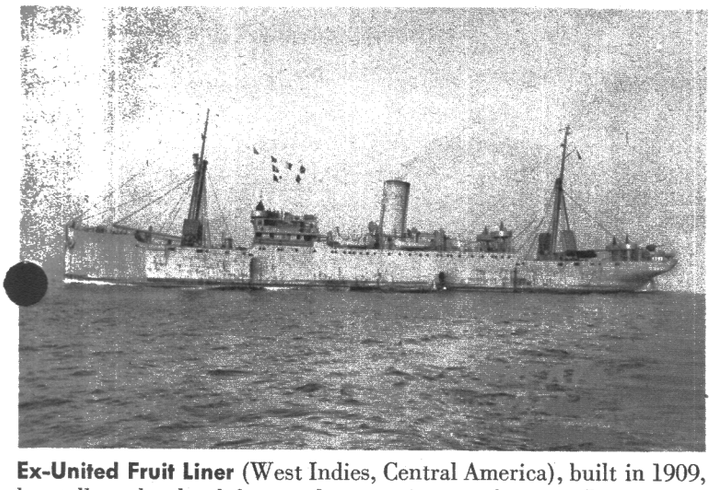
AUGMENT VESSELS OF U.S. SHIPPING LINES



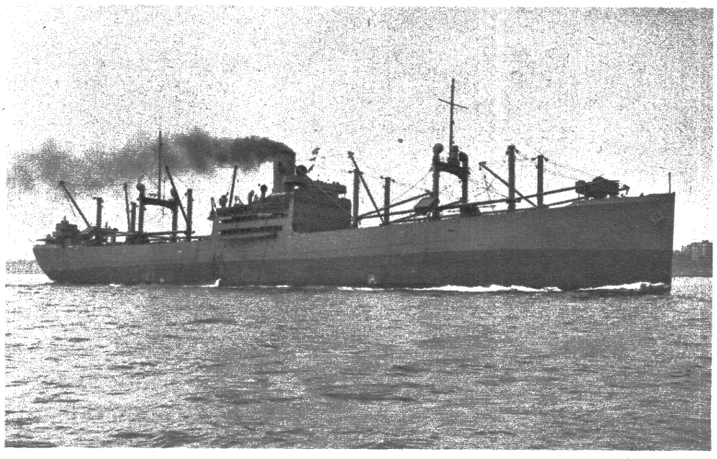
Sampson posts, stocky ventilators, generally cluttered block super-structure. In center background is World War I President Liner.



S.S. China Victory is the first of the new 10,500-ton class of emergency shipping to be known as Victory ships. Designed as the Liberty's successor, the Victory is faster, is longer and wider, has a taller, thinner stack set farther foward on superstructure and a long raised forecastle.

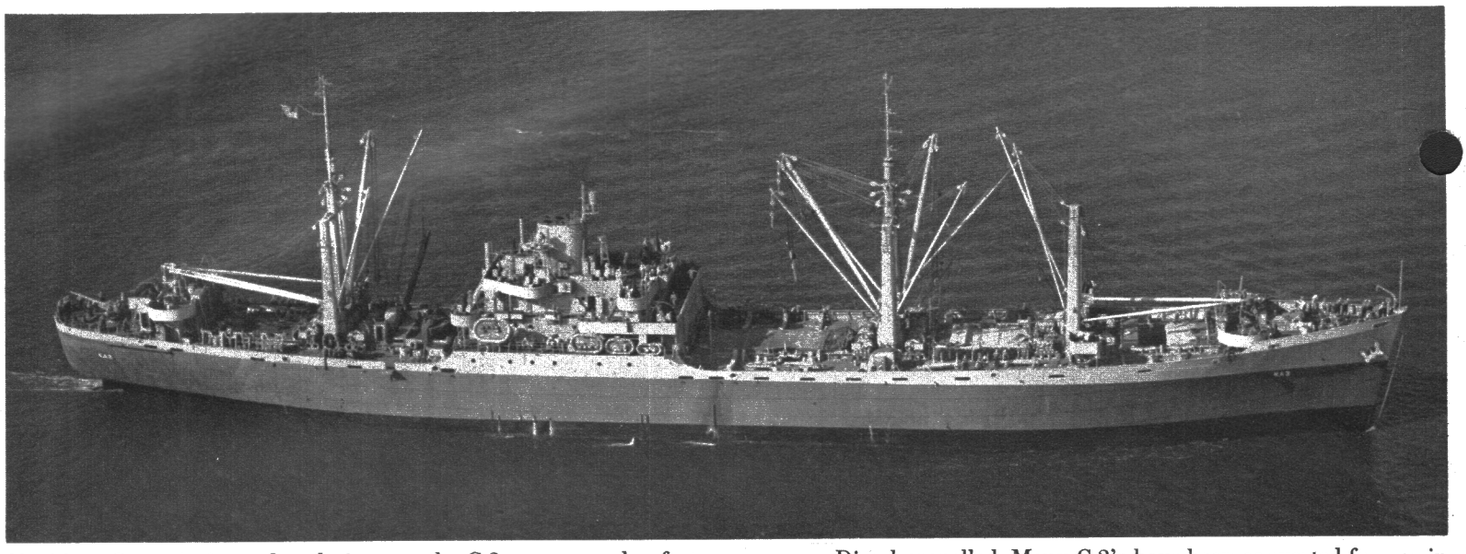


Ex-United Fruit Liner (West Indies, Central America), built in 1909, has tall stack, plumb bow and counter stern of its era. Long superstructure lined with portholes resembles an extended center island.

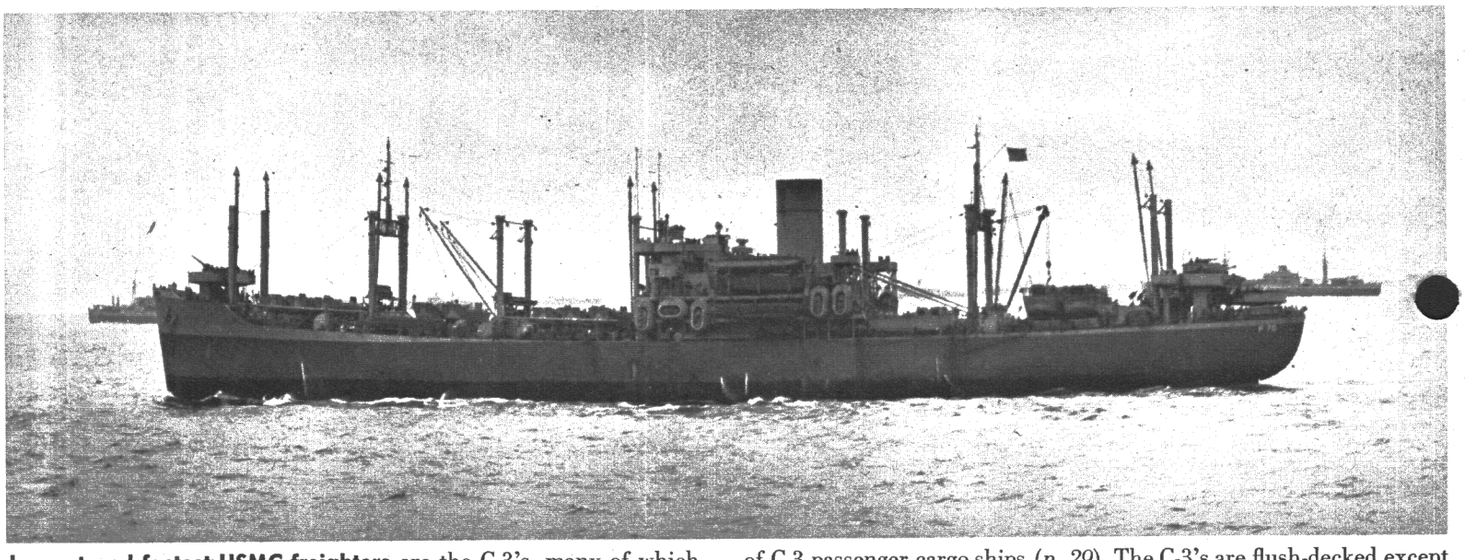


Luckenbach Liner belongs to a large family of flush-deckers built for cargo service after the last war. They have remarkably clean lines; are easily recognized by kingposts with arched crosstrees, cruiser stern.

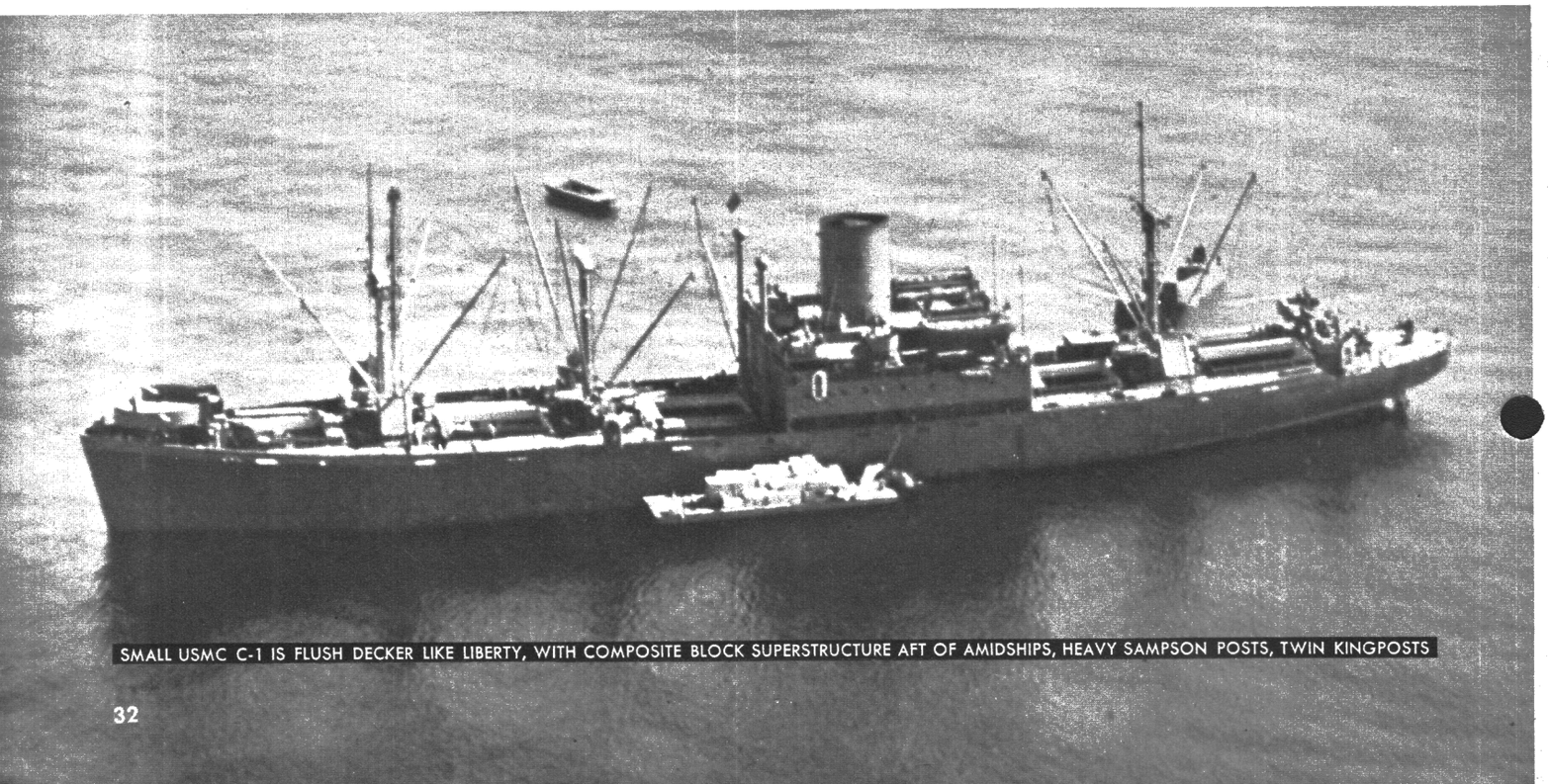
USMC DESIGNED FINE STANDARD HULLS



Maritime Commission's first design was the C-2 cargo vessel, a fast freighter with a gross tonnage of 6,100. It has sufficient fuel capacity to cross the Pacific and return on one bunkering, may be either steam or Diesel propelled. Many C-2's have been converted for use in the Navy as attack cargoes. Their hulls are frequently flush-decked except for a raised island with blocklike superstructure aft of amidships.

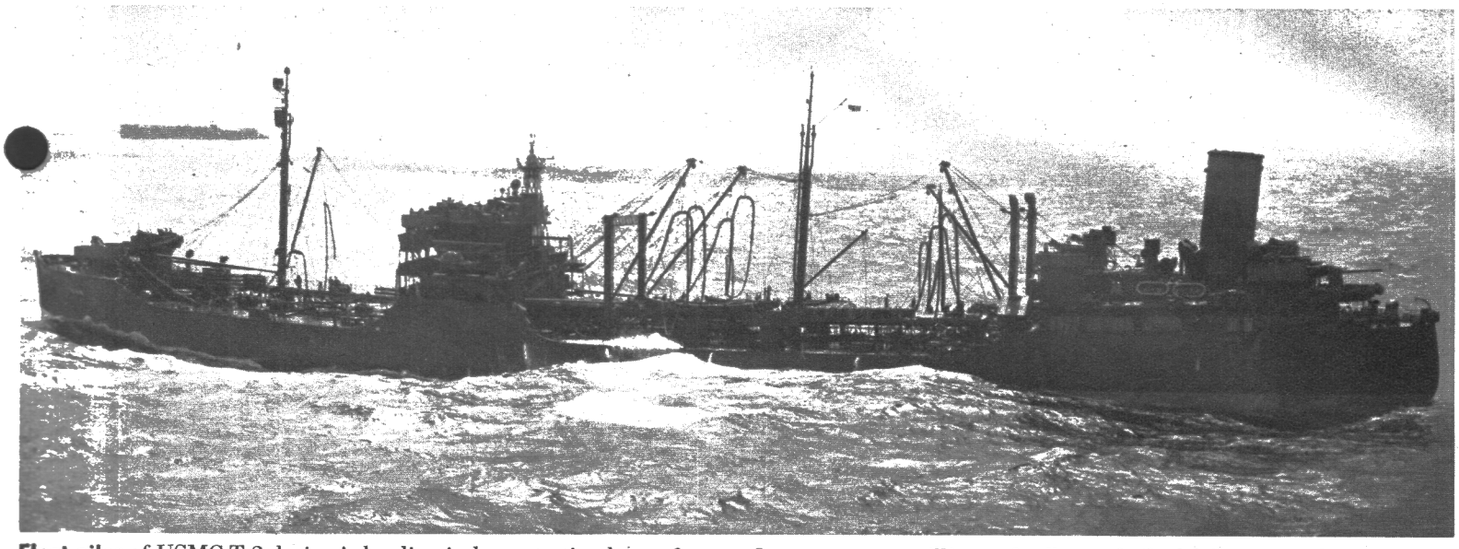


Largest and fastest USMC freighters are the C-3's, many of which have been converted into troop and repair ships, tenders and Bogue Class escort carriers. The same hull design has been used in a class of C-3 passenger-cargo ships (*p. 29*). The C-3's are flush-decked except for small raised forecastle, have many kingposts. Newest, most versatile USMC freighter, the C-1 (*below*) can enter even the smallest port.



SMALL USMC C-1 IS FLUSH DECKER LIKE LIBERTY, WITH COMPOSITE BLOCK SUPERSTRUCTURE AFT OF AMIDSHIPS, HEAVY SAMPSON POSTS, TWIN KINGPOSTS

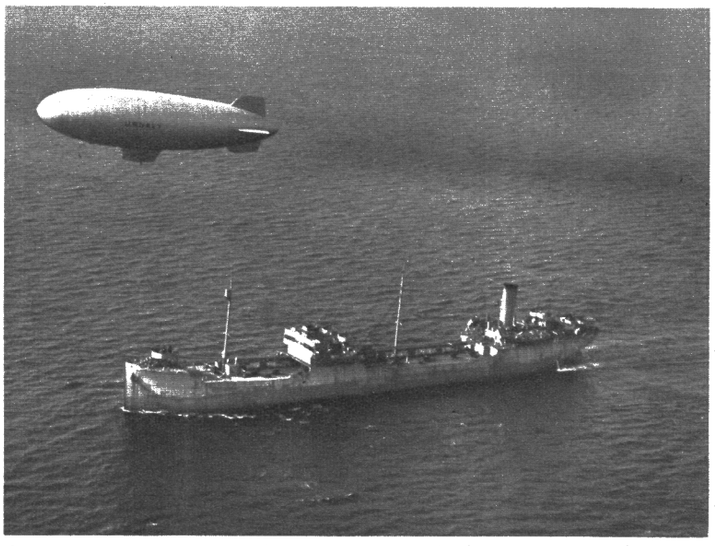
ENGINES-AFT FUEL AND CARGO TYPES



Fleet oiler of USMC T-2 design is hauling in her pumping hose after refueling a cruiser. Observe how waves break over her weatherdeck as she rides low. Fast, long-range T-2 tankers are designed to follow the fleet, can carry millions of gallons of oil of different grades. The main deckhouse and stack are well aft. The bridge is set on a raised deck forward of amidships. In the background is Independence Class CVL.



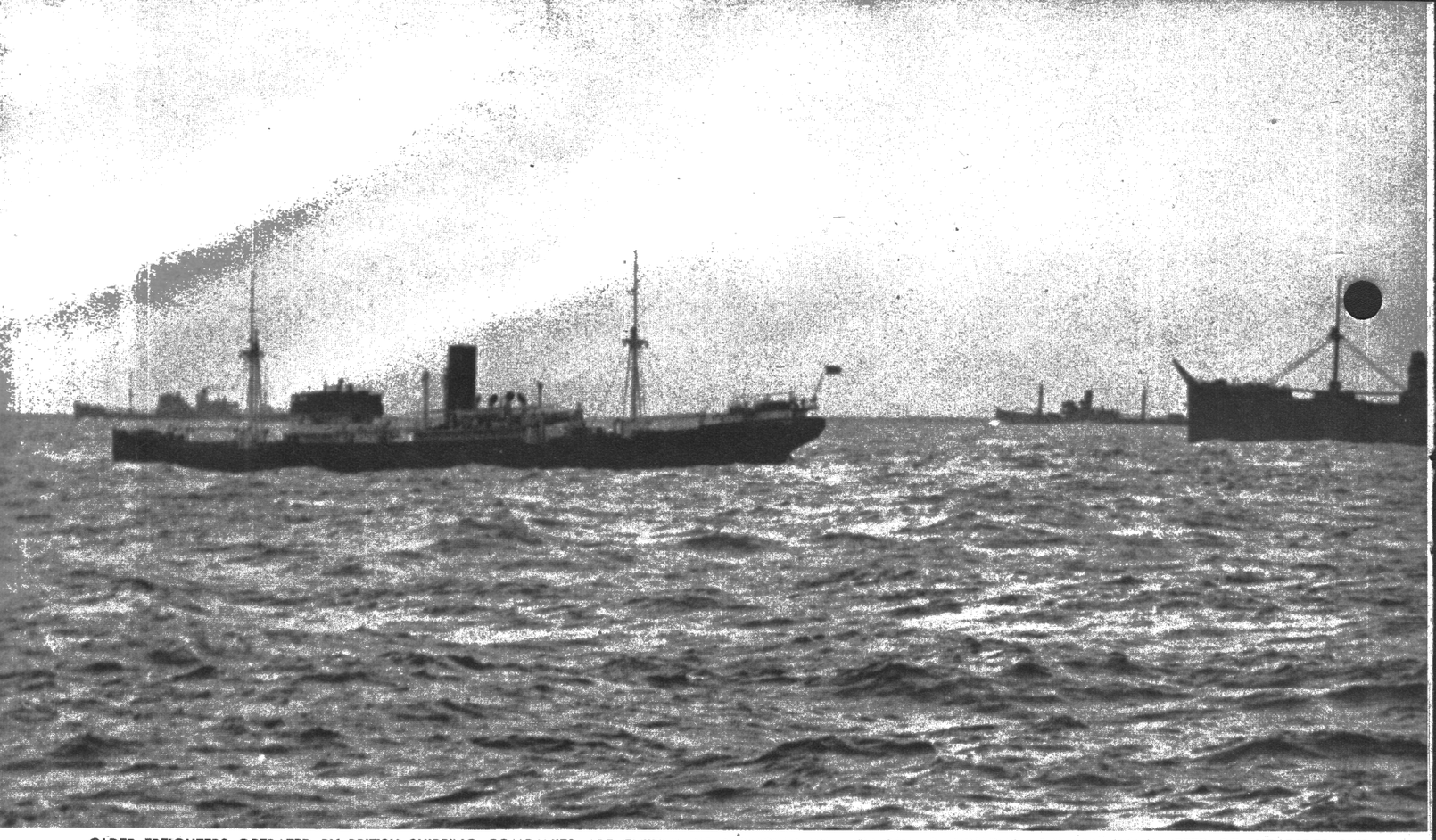
Small engines-aft coasters, like the M. & J. Tracy, have large cargo hatches in which they carry all kinds of shipments in peacetime between Eastern U. S. ports. These small ships usually burn coal.



Socony-Vacuum three-island tanker, built in 1916, differs from the USMC tanker at the top. Older ship has taller stacks, counter stern, plumb bow, lacks kingposts modern tankers use in handling fuel lines.



COASTAL OR GREAT LAKES CARGO CARRIER HAS SELF-UNLOADING CRANE ON FORECASTLE, TWIN AFT STACKS SET ATHWARTSHIPS, PROMINENT HATCHES

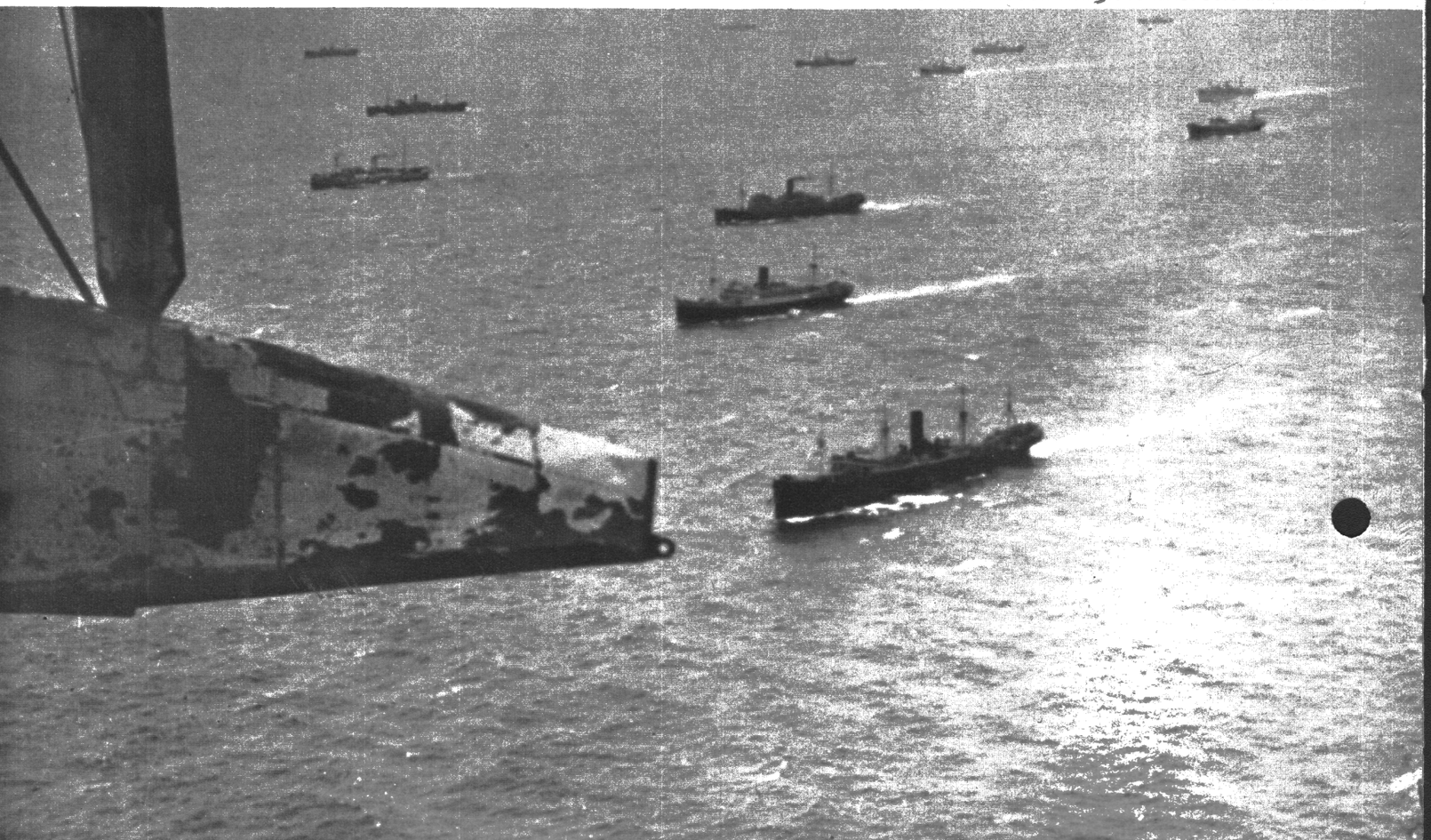


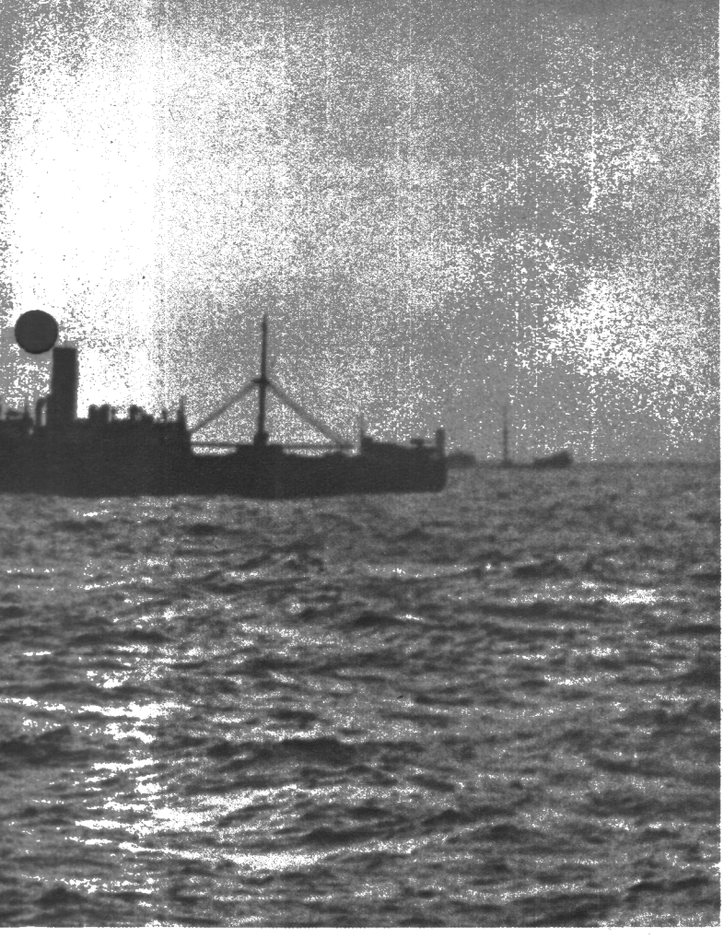
OLDER FREIGHTERS OPERATED BY BRITISH SHIPPING COMPANIES ARE CHIEFLY DISTINGUISHED BY THEIR SPLIT SUPERSTRUCTURES. THE SLOW SPEED OF THE OLDER SHIP

BRITISH BUILD VARIED TYPES

Many of the ships built in American shipyards are being allotted to British operators, but a large proportion of the United Nations' merchant fleet is made up of ships from British private shipping lines. A number of these lines developed a favorite design which they then had manufactured in quantity. As a result, large numbers of British ships have a strong family resemblance. For example, Blue Funnel Liners are clearly Blue Funnel

PANORAMA OF ALLIED CONVOY (BELOW) CONTAINS SEVERAL TYPICAL BRITISH SHIPS (NOTE SPLIT SUPERSTRUCTURES). THOUGH NUMEROUS KINGPOSTS MARK THEM AS



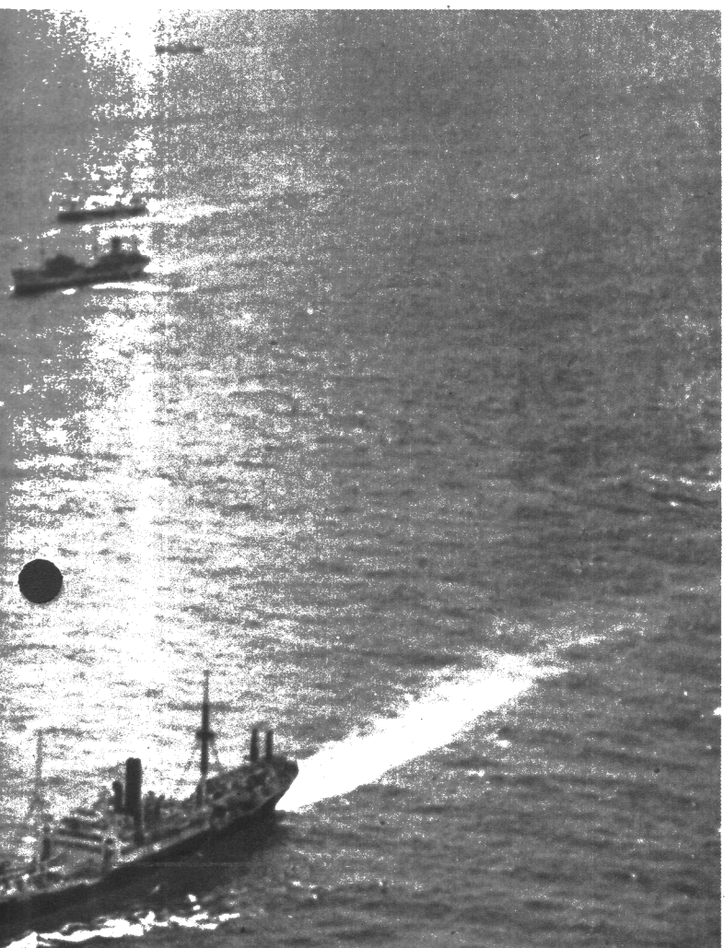


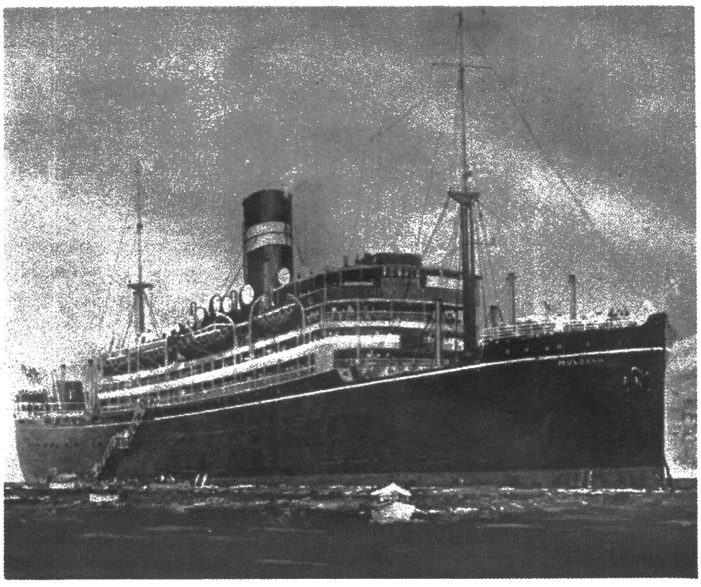
(LEFT) IS INDICATED BY PLUMB BOW, COUNTER STERN AND TALL UPRIGHT STACK

Liners; Clan Forbes and Clan MacArthur, clearly Clan Line freighters.

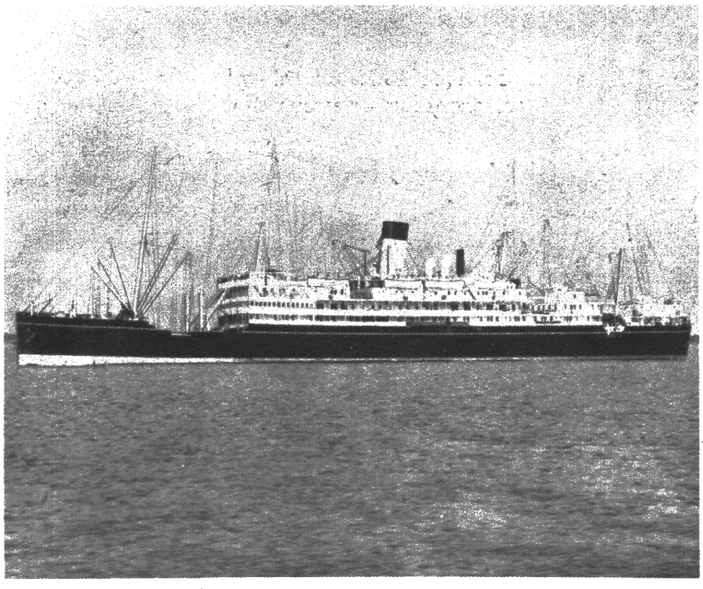
Though most British shipyards are taken up with naval construction, the Admiralty has developed some standard merchant types. To compare with our Liberties, the British have the Ocean, Fort and Empire classes (*see p. 39*); a new fast cargo design of 12,000 tons (comparable to U. S. Victory ships), is now coming down British ways. All help make the Allied fleet the world's most formidable.

CARGO CARRIERS, THOSE IN FOREGROUND PROBABLY ALSO CARRY PASSENGERS

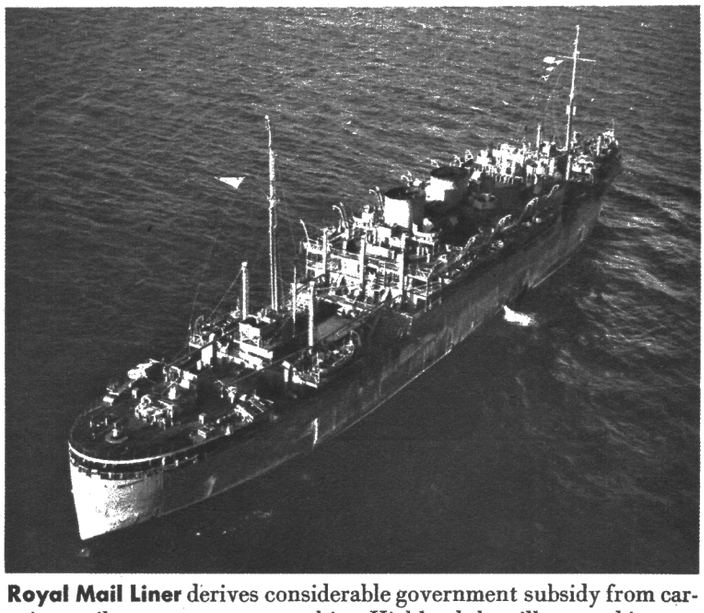




British India Company's colonial traffic was carried on by passenger-cargo ships built since 1911. These ships are distinctive for their large superstructure, prominent stack and two extremely tall masts.

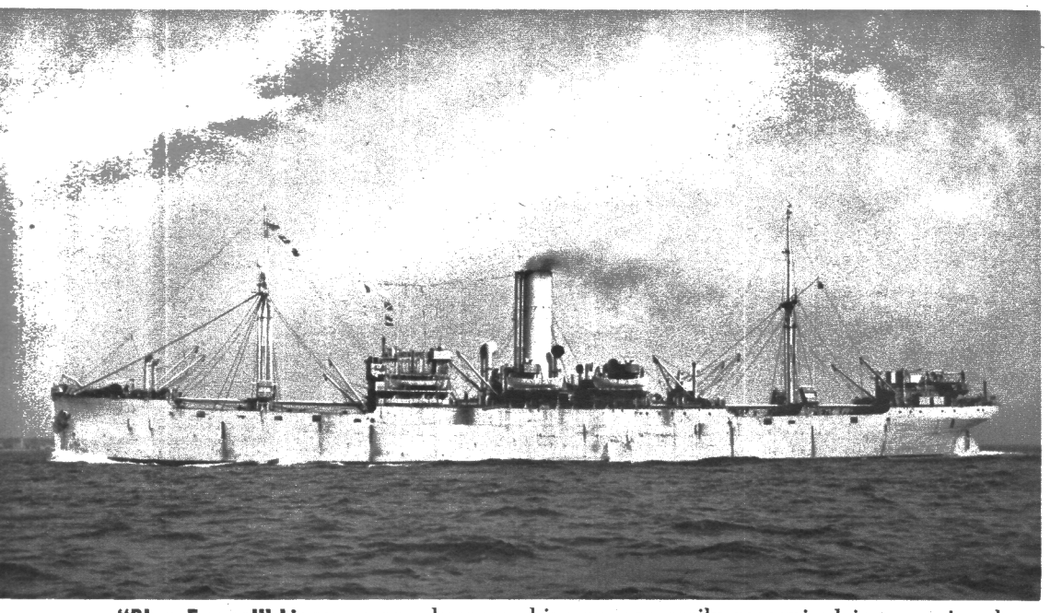


Derbyshire of the Bibby Line, built in 1935, has four large masts—a carry-over from old sailing vessels—and intricate rigging. It is now a troop and ammunition ship capable of making speeds of 16 knots.



Royal Mail Liner derives considerable government subsidy from carrying mail on passenger-cargo ships. Highland class illustrated is comfortable two-stacker with unusual break in forward superstructure.

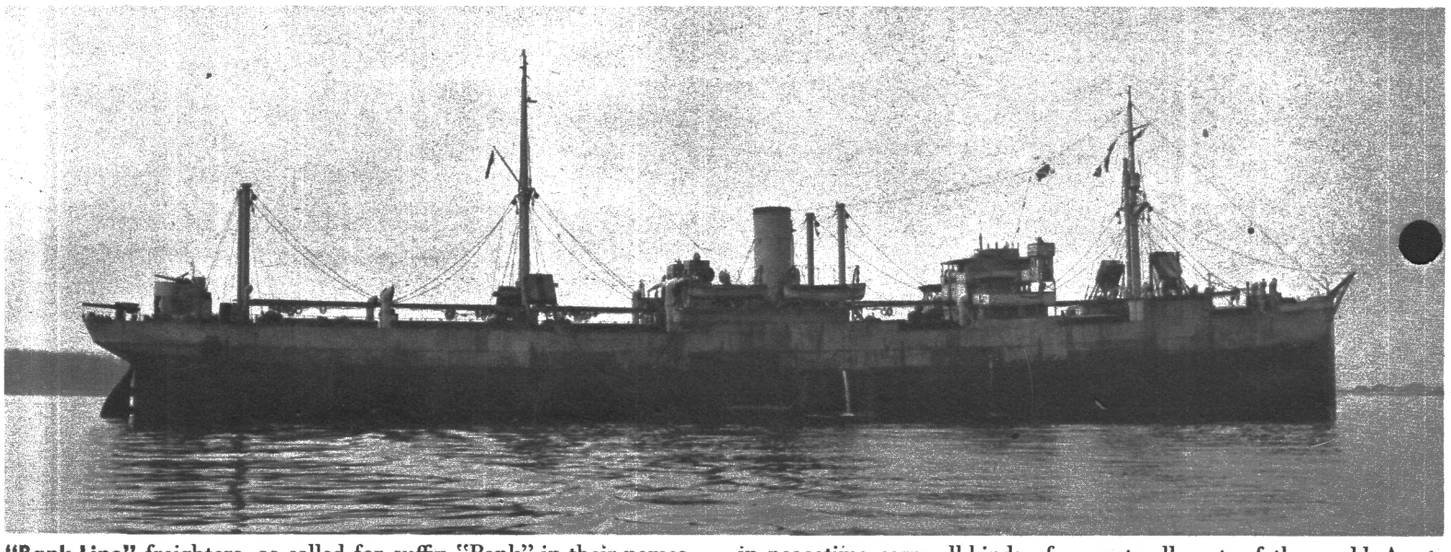
BRITISH SHIPPING LINES' FAVORITE



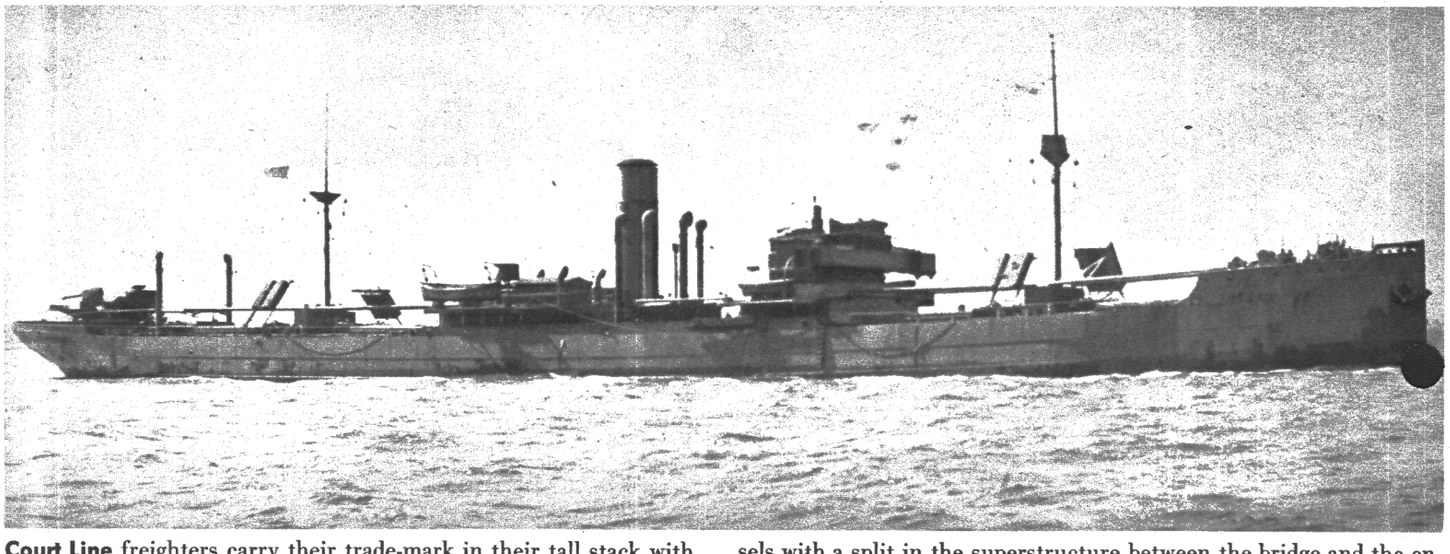
"Blue Funnel" Liners, seen wherever ships go, are easily recognized in peacetime by a large, vertical funnel painted blue with a black band on the top. All "Blue Funnelers" are named for mythological Greek heroes, have well deck and prominent ventilator kingposts.



Vast Ellerman Line sails ships named after the large cities of the world. Built over a period of 25 years for the British colonial trade,



"Bank Line" freighters, so-called for suffix "Bank" in their names, are mostly motor ships built in the '20's and '30's. They are flush-deckers with the split superstructure typical of their building period, in peacetime carry all kinds of cargo to all parts of the world. A catwalk has been erected for use by the crew when the weather deck is covered with cargo. Twin kingposts operate bunker hatch next to stack.

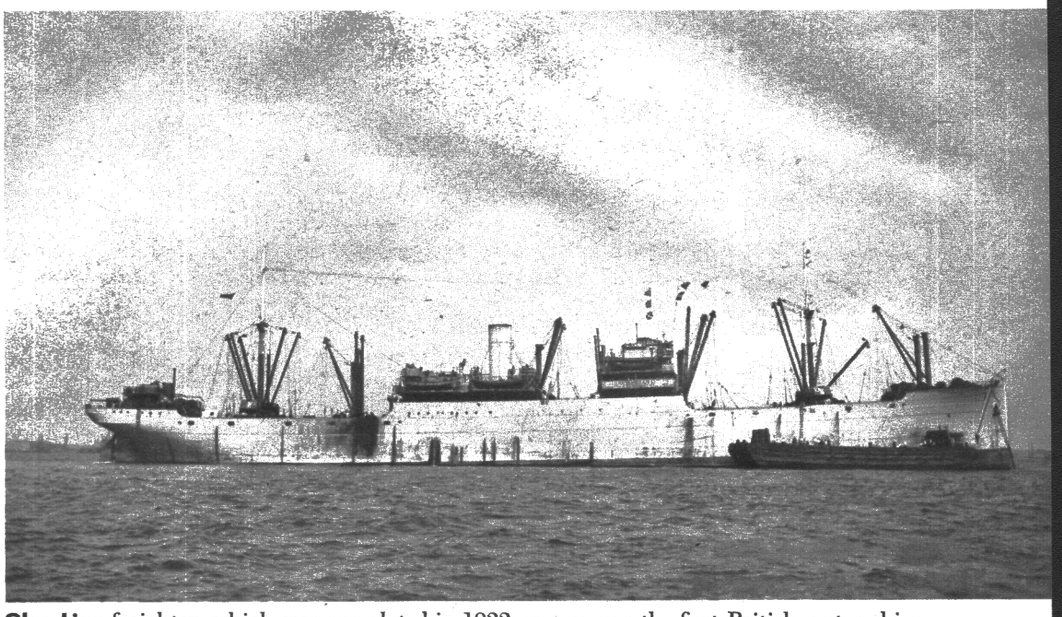


Court Line freighters carry their trade-mark in their tall stack with four close-set ventilator kingposts, raised forecastle and slight hull sheer. These freighters are typical of many other old British cargo vessels with a split in the superstructure between the bridge and the engine house. The basic Court design is a predecessor of the Forts' (*p. 39*). In peacetime their services were classified as "general tramping."

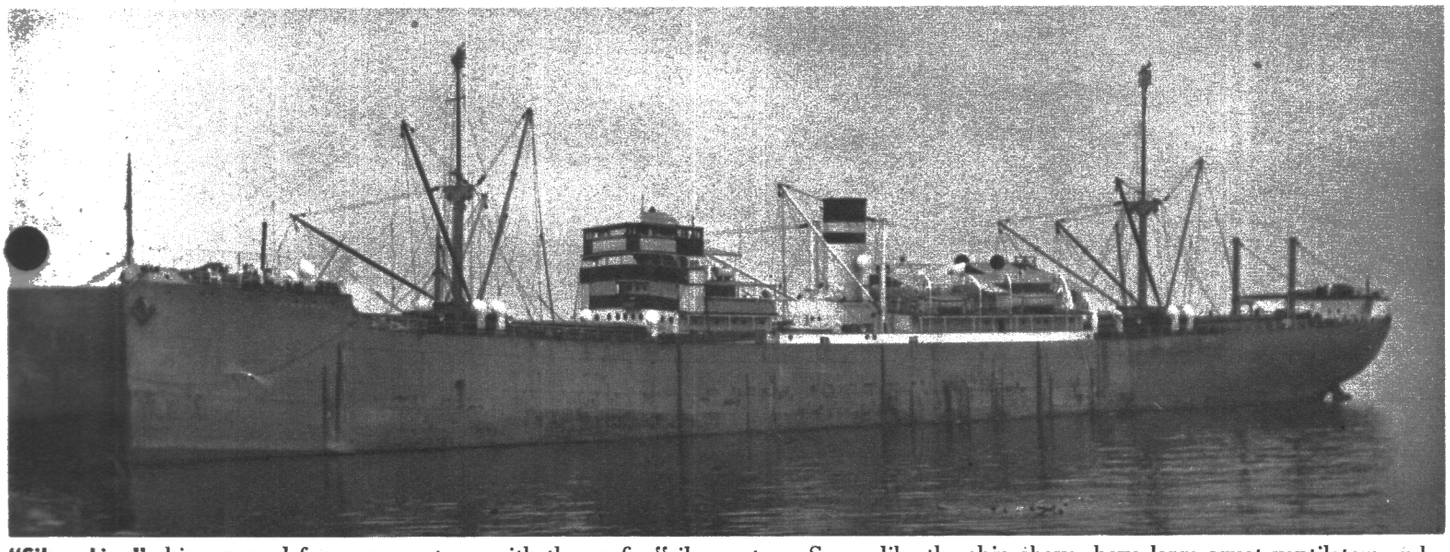
SHIPS HAVE SPLIT SUPERSTRUCTURES



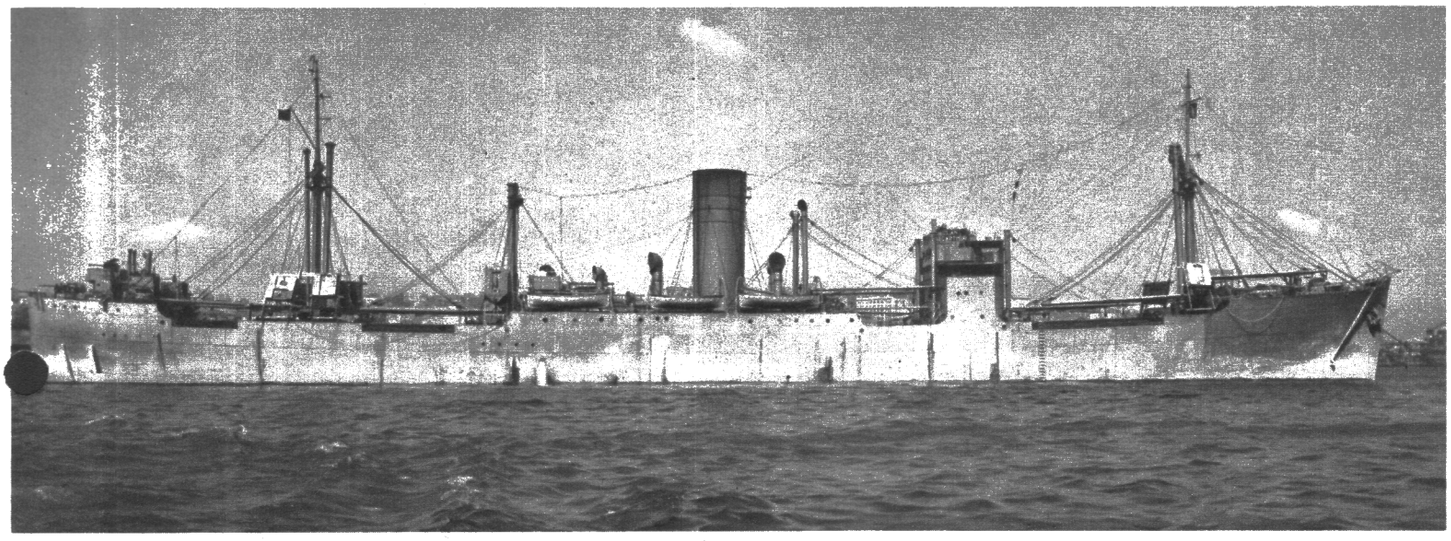
the "Cities" usually have a split superstructure, a cruiser stern, a long poop and forecastle with the mainmast mounted on the poop.



Glen Line freighter, which was completed in 1922, was among the first British motor ships. Its well deck is common to all Glens. Other features are numerous heavy booms and kingposts and such old marks as plumb bow, counter stern, tall stack and general angularity.

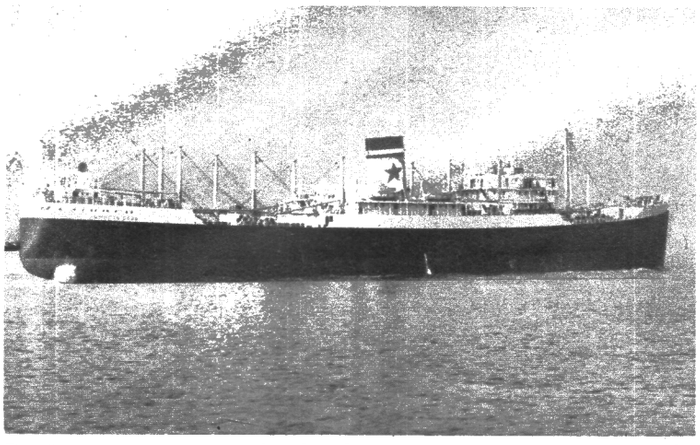


"Silver Line" ships, named for common trees with the prefix "silver," were built in the latter '20's for round-the-world service. Most ships of this line have a raised forecastle, plumb bow and cruiser stern. Some, like the ship above, have large squat ventilators and a split superstructure with clean lines about the bridge. "Silver Liners" are typical small British cargo ships. Some have refrigerated holds.

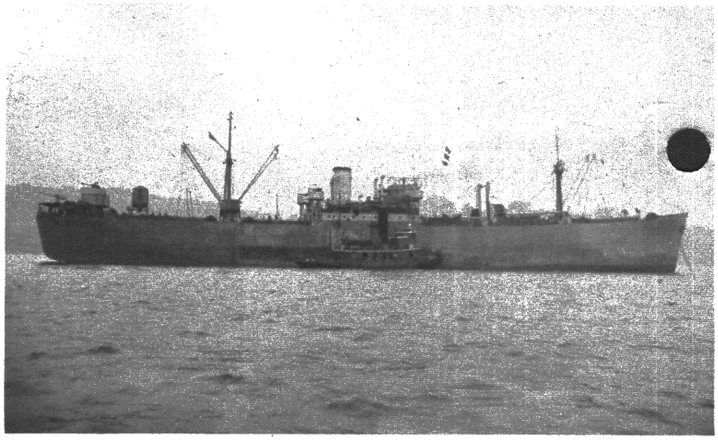


Clan Line freighters represent a sizable class of split-superstructure, steam-driven vessels equipped to handle the heaviest cargoes. Most of the "Clans" were built in the '30's; some are capable of high speeds. An unusual "Clan" feature is the well between the bridge and the engine house. The oversize stack is directly amidships. Three-island freighter design offers some protection to cargo in heavy seas.

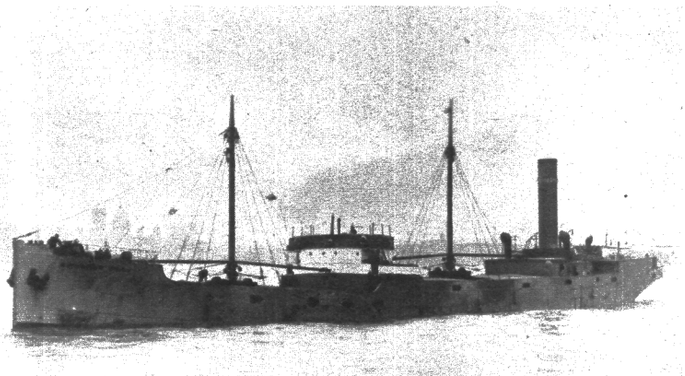
DIVERSE TYPES SWELL BRITISH CONVOYS



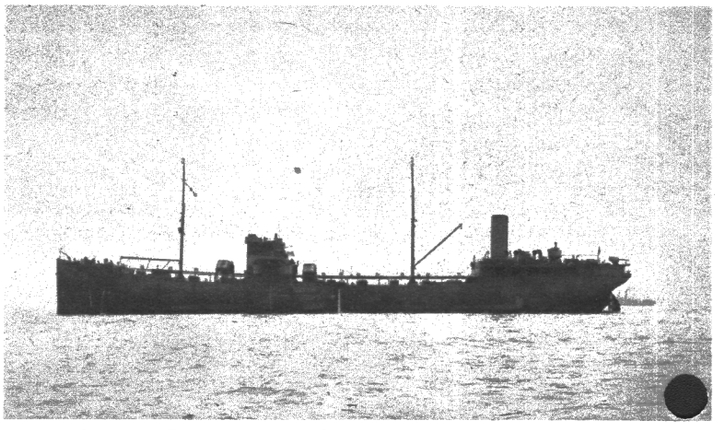
Distinctive in peacetime for the blue star on her large sloping stack, the Blue Star Liner is one of Britain's finest modern freighters. She has a split superstructure and numerous kingposts aft; no mainmast.



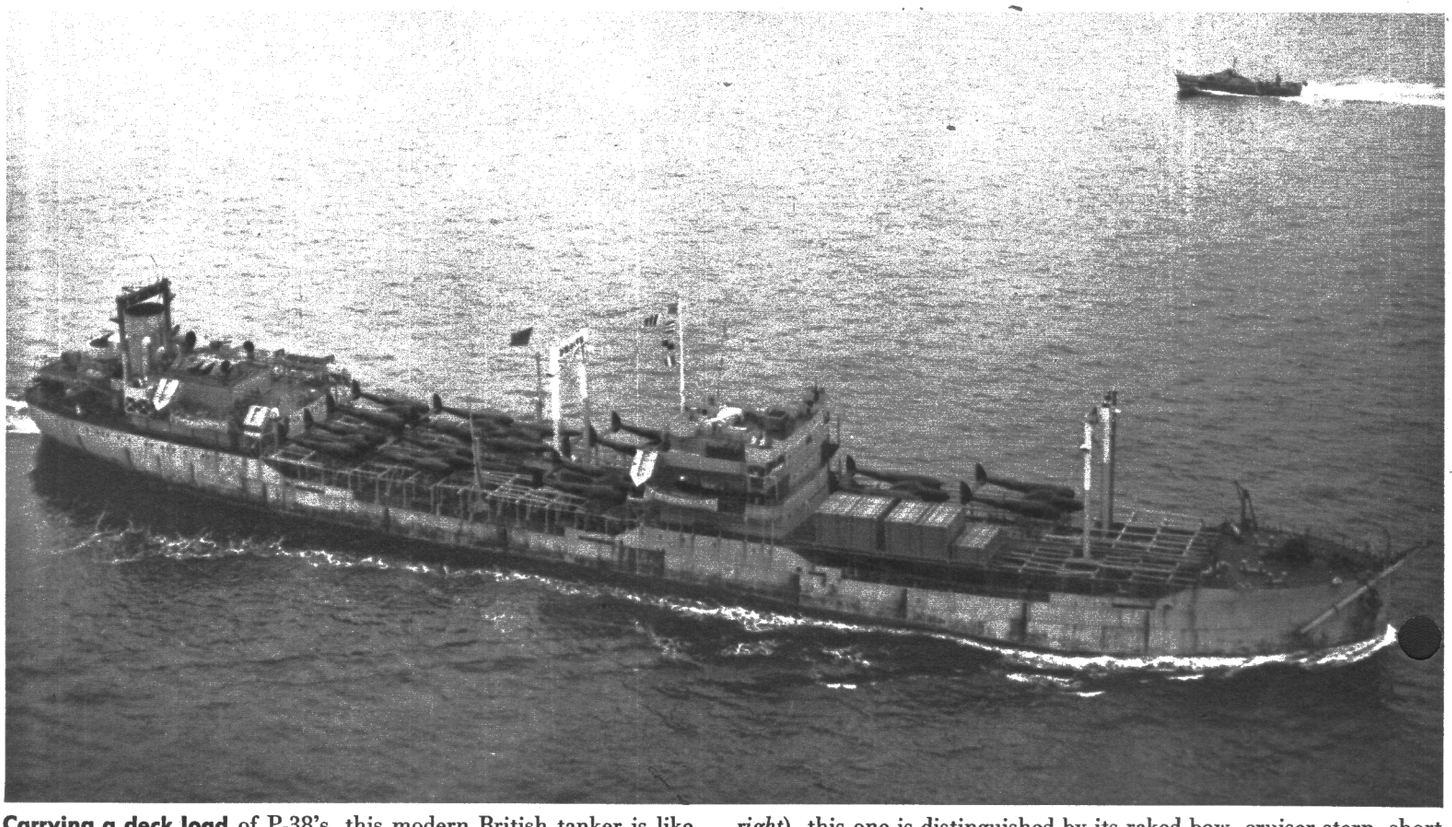
Large modern freighter, built in 1936 for tramping service, has a new hull with clean, simple lines, resembling those of modern Scandinavian ships; four large hatches; raked bow; sheer on foredeck and cruiser stern.



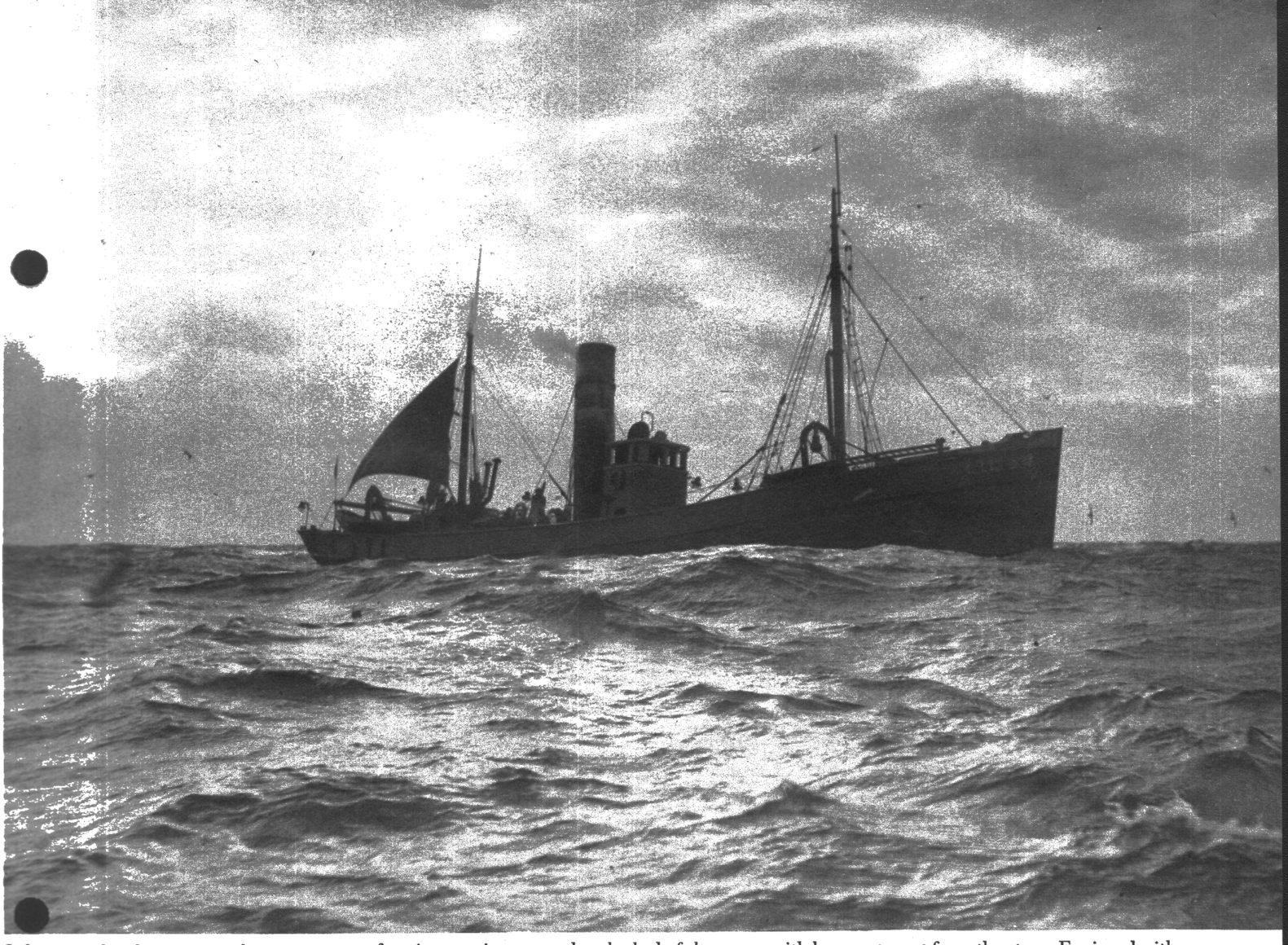
British coaster of the "Rose" class is a small bulk cargo carrier built in 1930. In spite of her relative newness, this "Rose" has the lines of a typical old coaster—plumb bow, counter stern and a very tall stack.



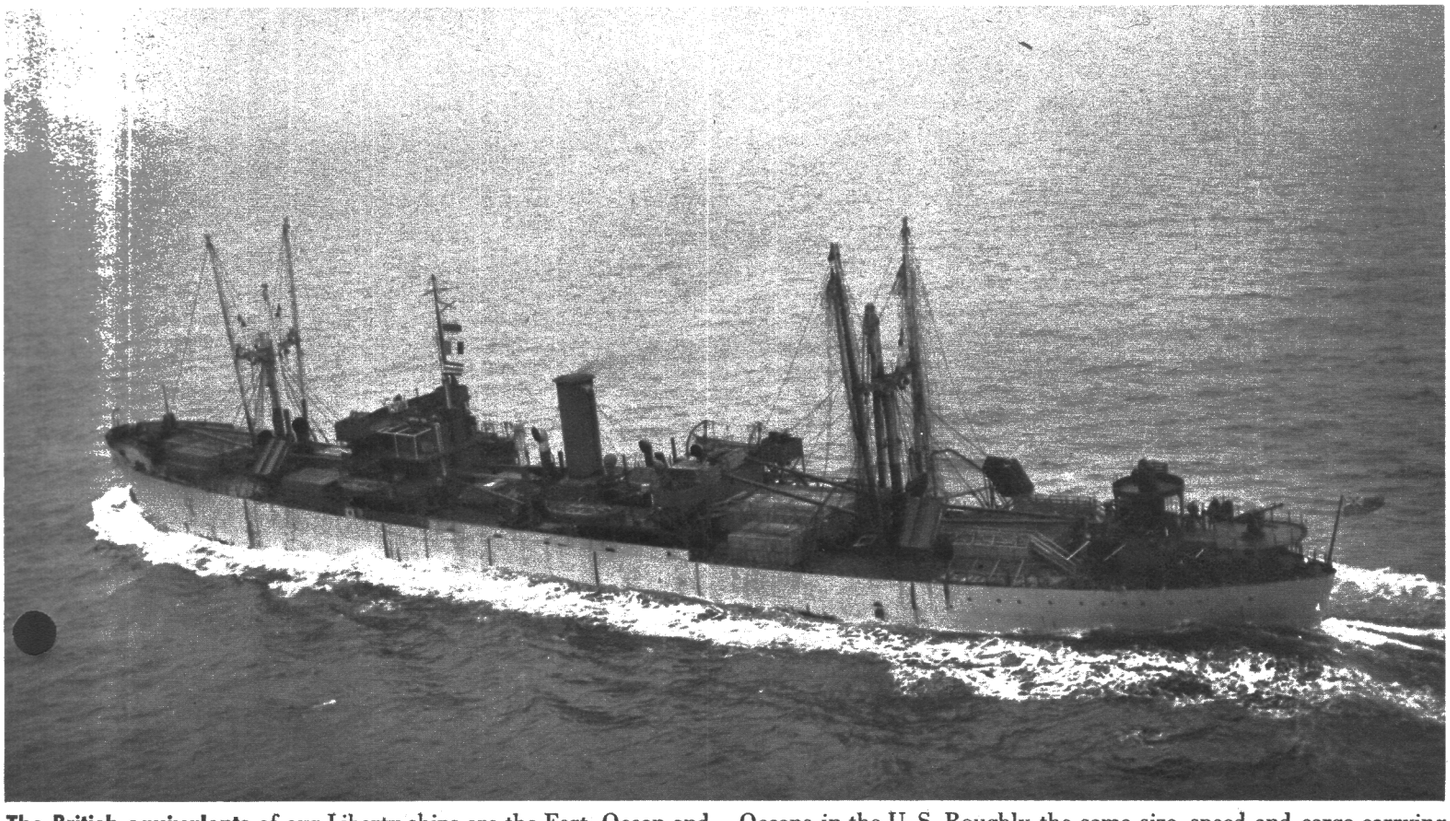
Anglo-Iranian Oil Company charters a great number of old-line British tankers like this three-islander with steam-reciprocating engines. Constructed in '20's and '30's they look like tankers the world over.



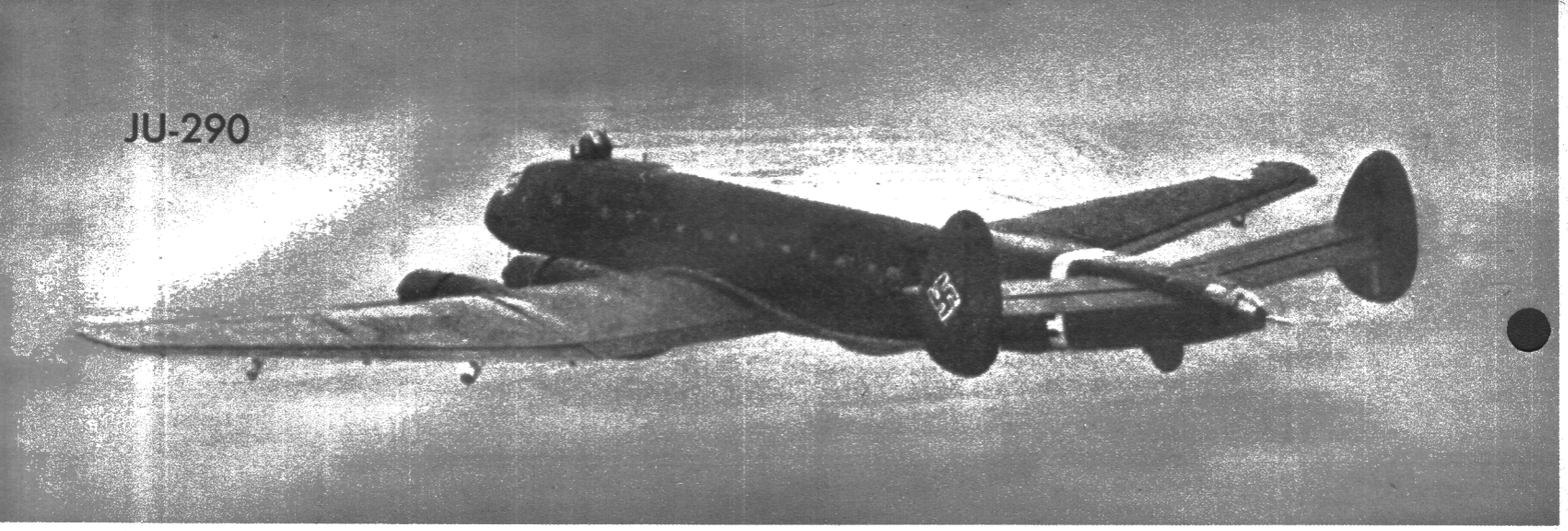
Carrying a deck load of P-38's, this modern British tanker is like many others that are doing double duty rushing supplies and equipment to the fighting fronts. Compared with the older tanker (*above right*), this one is distinguished by its raked bow, cruiser stern, short fat stack, and streamlined navigation bridge. It has three pairs of goalposts, one just forward of the stack. Most tankers have three islands.



Salty, weather-beaten trawlers are now performing wartime coastal shipping service out of all proportion to their small size. In peacetime their high, sturdy bows cut through the heavy seas as they drag the bed of the ocean with large nets cast from the stern. Equipped with powerful winches for hauling in the nets, the trawlers are adaptable for use as minesweepers. Sometimes they also serve as pilot cutters.



The British equivalents of our Liberty ships are the Fort, Ocean and Empire classes, emergency types which the British are turning out on a mass-production basis. The Forts are built in Canada and the Oceans in the U. S. Roughly the same size, speed and cargo-carrying capacity as our Liberties, they are coal-burning, have split superstructure and a lower deckline. Anti-torpedo nets hang from special booms.



TRANSPORT AND HEAVY BOMBER, JU-290 WAS DEVELOPED FROM JU-90 (BELOW), HAS NEW WING, FINS AND RUDDERS. ONE VERSION HAS SQUARISH FINS, RUDDERS

GERMAN 2ND LINE

Varied types supplement top Nazi bomber & fighter force

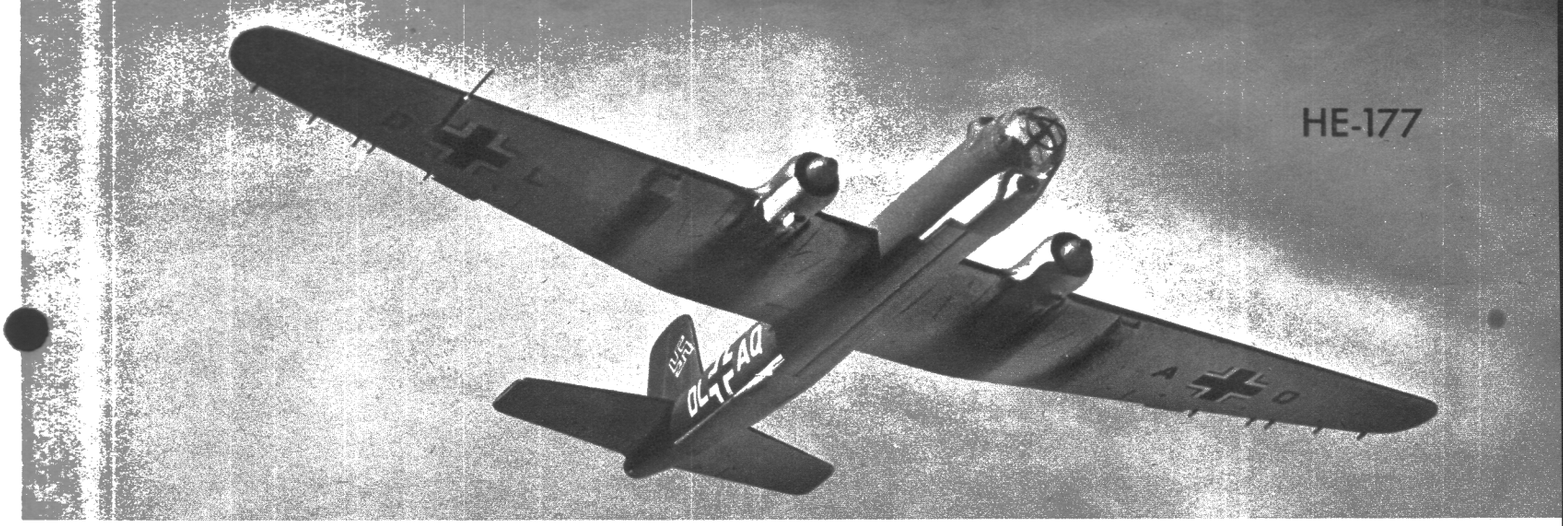
In addition to the offensive and defensive first-line planes holding the continent of Europe against the assaults of the Allies, the German Air Force, like all air forces, has a line-up of second-string planes. Varied in their duties, they range out from the coasts of Norway, France and northern Italy, shadowing convoys, bombing and torpedoing stragglers; others operate almost entirely in the Russian theater as army cooperation, liaison and reconnaissance planes.

Many of them illustrate the unorthodox aspects of German aircraft development and design. There is, for example. the Ju-86, first warplane powered by Diesel engines. There is also the He-177 whose four engines drive but two propellers. Finally there is the FW-189, an early twin-boom type.

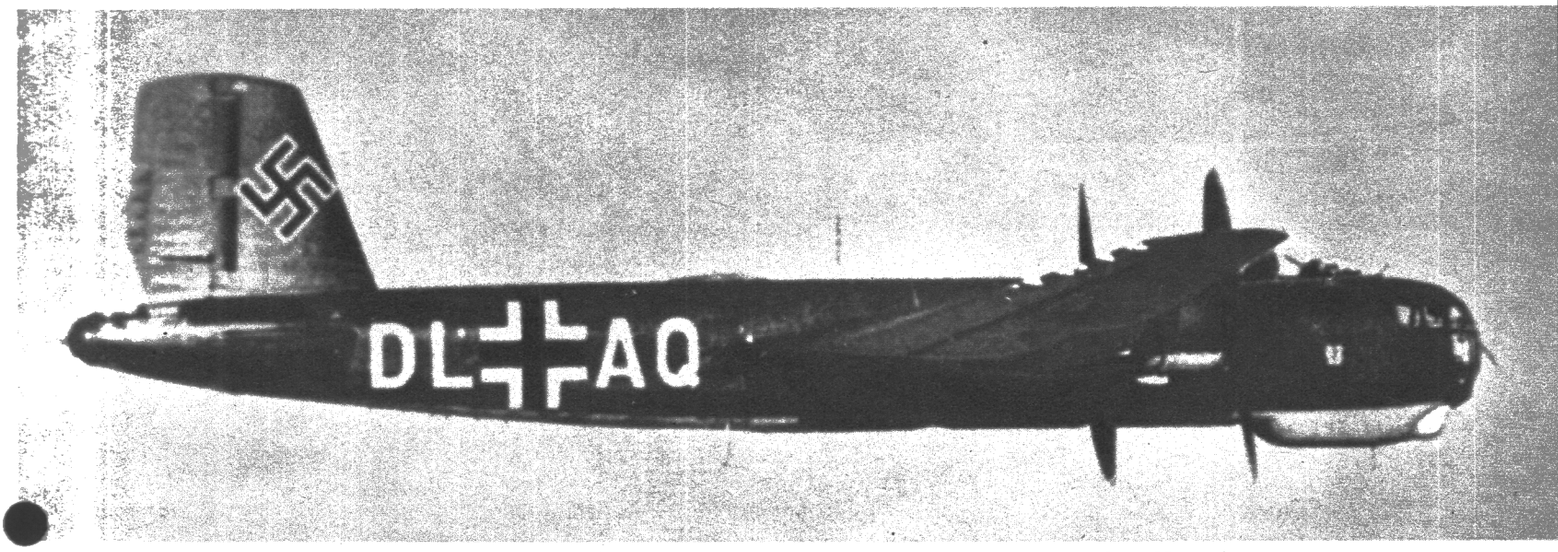
Many of the planes pictured on these and the six following pages may look odd to observers accustomed to U. S. aircraft. Nevertheless they are extremely efficient at their various tasks, have shown a versatility fully in keeping with the Luftwaffe tradition of getting top service from each type. And with their skill at improvisation the Germans may well throw some of these second string planes into the "big league" fight whenever invasion makes critical the position of the already battered Nazi air strength.

JU-90 GOES DOWN OFF CORSICA, VICTIM OF AN RAF MARAUDER (B-26). NOTE BULKY FUSELAGE, UNUSUAL WING SHAPE. IT CAN CARRY 40 FULLY-ARMED TROOPS





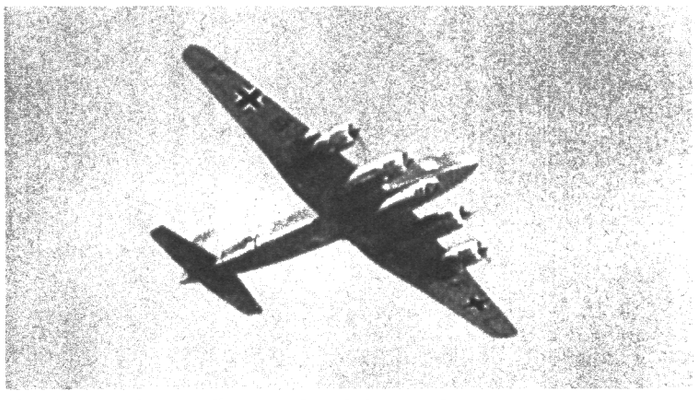
Unorthodox heavy bomber, He-177 has four inline engines in two nacelles. Though it became operational to a limited extent late in 1941, it has only recently appeared in moderate quantity. Wing span is about equal to that of the B-17. He-177 is equipped to carry glider bomb.



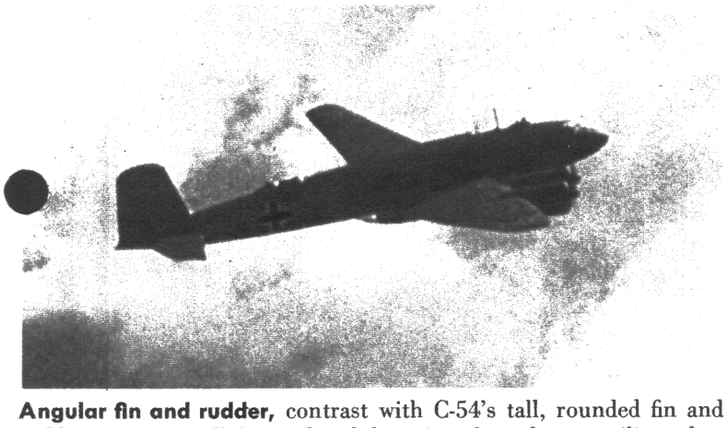
Angular lines of He-177 show no family resemblance to the smoothly curved lines of He-111, formerly one of the Luftwaffe's most important medium bombers (see *Journal* for November). Note heavy nose construction, single fin and rudder set forward of tail gun position.



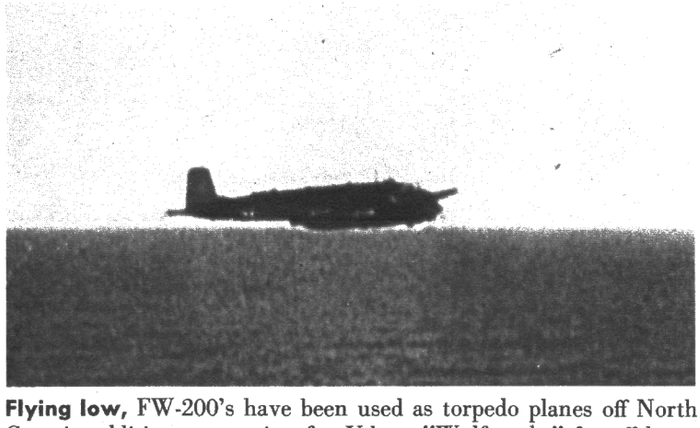
Focke-Wulf Kurier is a big, low-wing, four-engine patrol bomber used for long-range sweeps over Atlantic from bases in France and Norway.



Slender fuselage, off-center bomb bay under nose distinguish FW-200 from C-54. One of latter was recently taken for Nazi, shot down.



Angular fin and rudder, contrast with C-54's tall, rounded fin and rudder, curving well forward and dropping abruptly on trailing edge.



Flying low, FW-200's have been used as torpedo planes off North Cape in addition to spotting for U-boat "Wolf packs" far offshore.

ARADO-196

Nazi single-engine floatplane, the Arado-196 operates both from catapults and coastal bases. It is used chiefly for reconnaissance but may attack small ships, slow Allied planes on antisubmarine patrol. Important for recognition are twin floats, single engine, broad wing with

BLOHM & VOSS-222



Huge flying boat, the BV-222 was designed for commercial use. It exists in small numbers as a long-range patrol and transport plane.



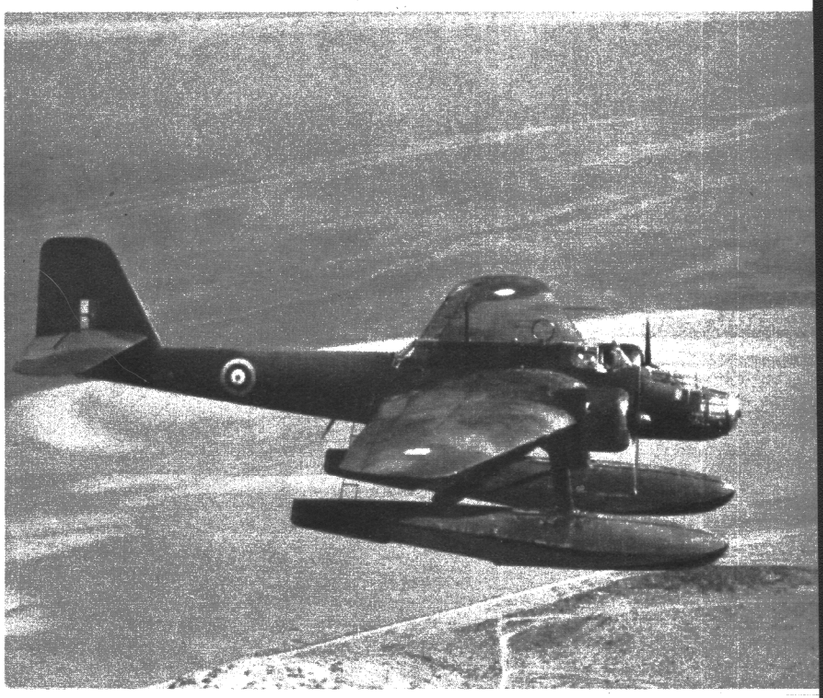
Six engines on 150-ft. wing give BV-222 speed of 240 m.p.h. Vast bulk, drooping nose, single fin and rudder are outstanding features.

very slight taper, blunt wingtips. Ar-196 is fast, well-armed, quite maneuverable for a seaplane. It carries two cannon, three machine guns.

HE-115



Heinkel torpedo bomber, He-115 first appeared as a mailplane. Primarily a patrol type, the He-115 launched torpedoes against convoys.

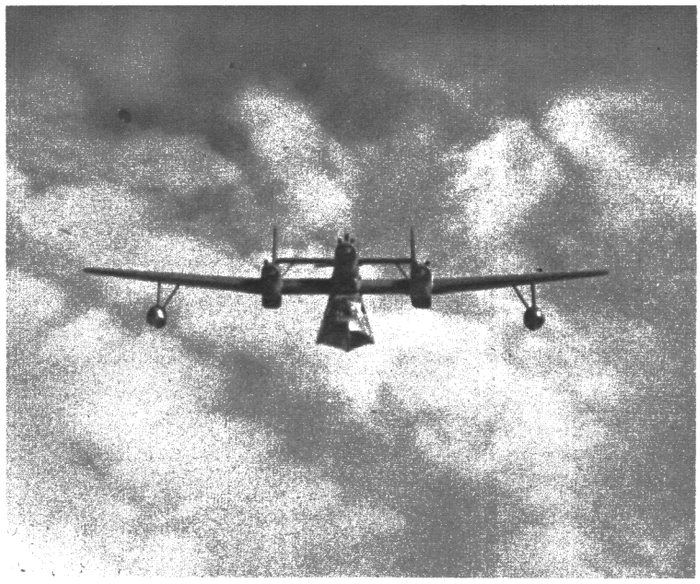


Long nose, twin floats and the wing's tapered leading edge help distinguish the He-115. It was the first Nazi plane to sow magnetic mines.

BLOHM & VOSS-138



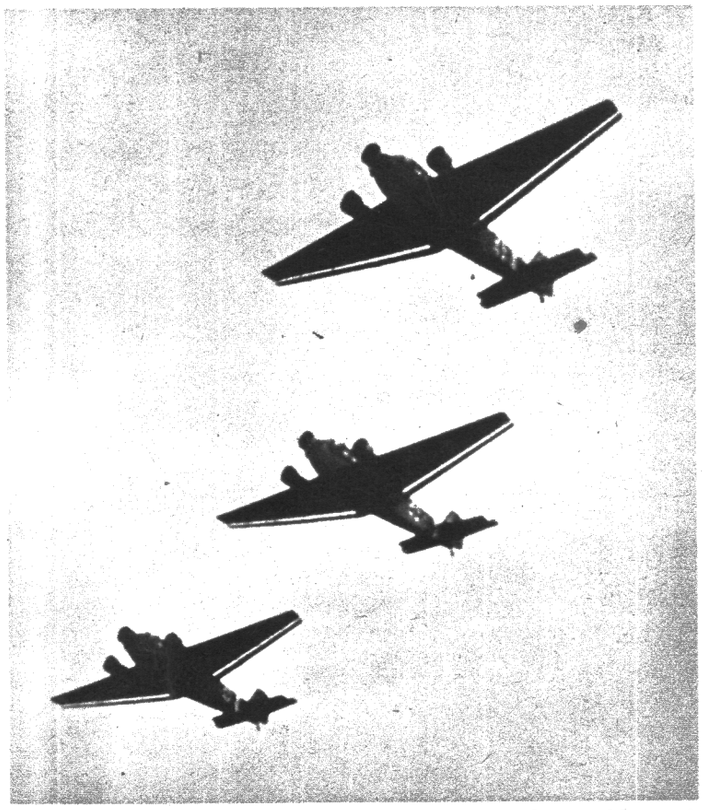
Odd-shaped hull gives BV-138 apt nickname "Flying Shoe." Used for reconnaissance, it was designed by the creator of asymmetrical BV-141.



Three engines, twin-boom construction identify BV-138. Stabilizer is braced. The wing's dihedral begins outboard of the small nacelles.



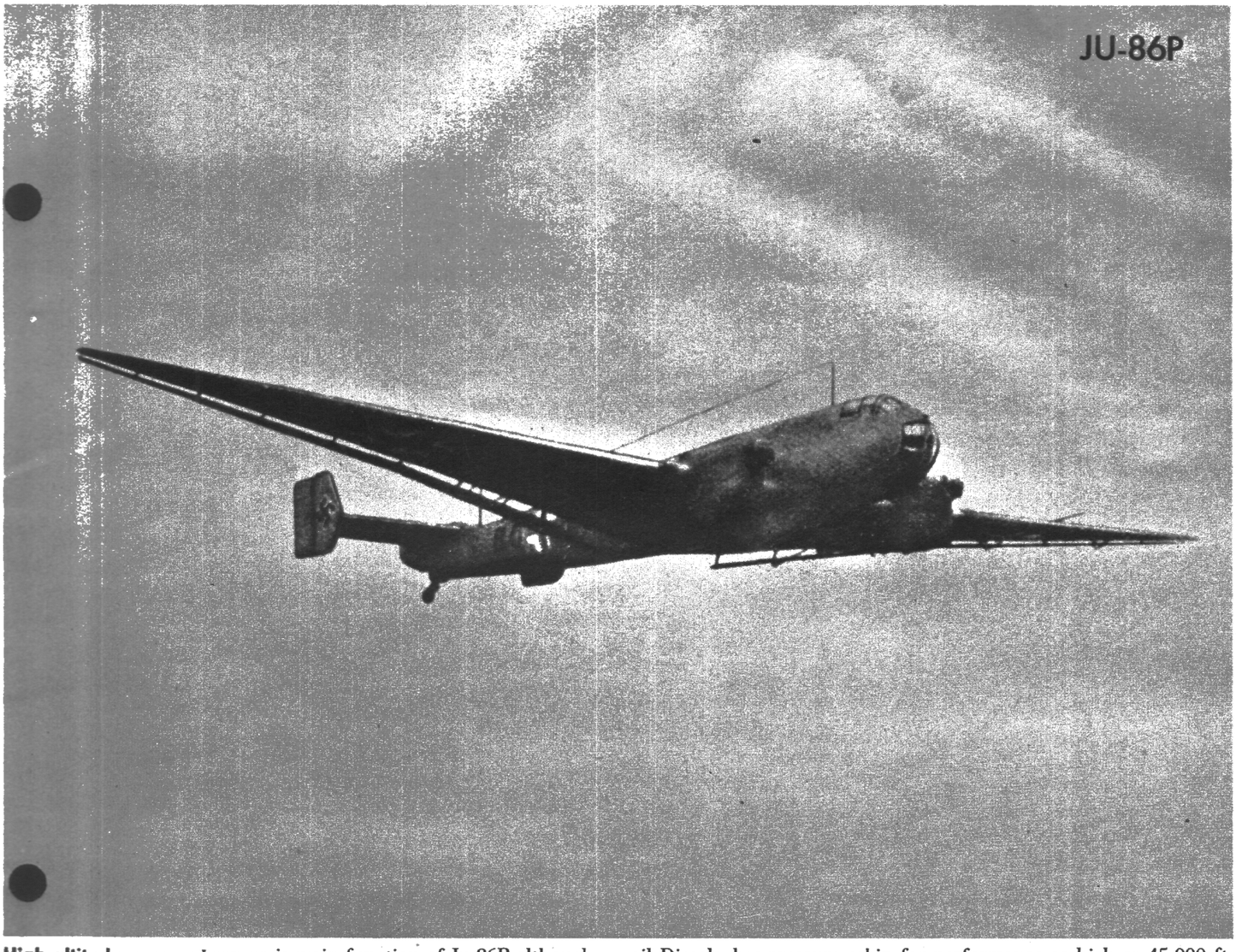
Raked by Allied guns, formation of Ju-52 transports skims over Sicilian Straits. B-25's (*top left*) and P-38's shot down 25 out of 35 in this running battle in May 1943. First built in 1932, sturdy Ju-52 is still the Nazis' most important transport, troop carrier and glider tug.



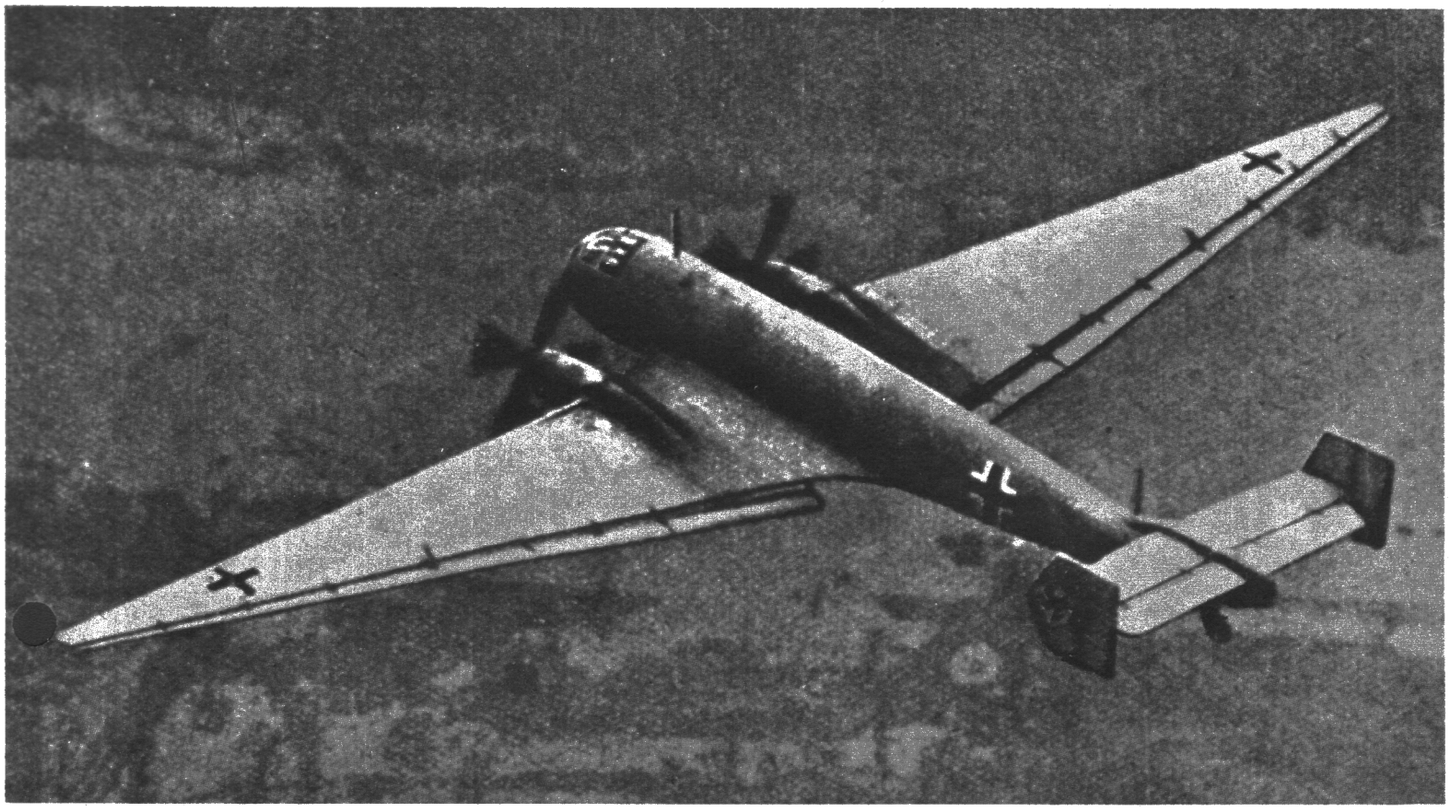
Angular, boxy wing, squared-off fuselage and tail assembly mark Ju-52. A further recognition point is the plane's fixed undercarriage.



Landing in Poland, Ju-52 shows Junkers "double wing" with aileron from root to tip. Ju-52 is one of few tri-motored planes in operation.



High-altitude reconnaissance is main function of Ju-86P although up to a ton of bombs may be carried. The plane is powered by heavy-oil Diesels, has pressure cabin for performance as high as 45,000 ft. It is a development of the Ju-86K, a standard German prewar bomber.



Engine nacelles set close to fuselage appear to be extremely small. Like Ju-52, the Ju-86P has "double-wing" construction. Usual span is between 84 and 87 ft. and there is a new long-span version. Note the fixed tail wheel, wide rectangular tailplane set atop the fuselage.



Fi-156 is known as Storch (stork) because of stalky fixed undercarriage. Since it can land, take off in very little space, hover over small area, it is used for liaison and detailed reconnaissance. General Montgomery used captured Storch for some time during Libyan campaign.



An observation plane, Henschel-126 may also carry light bomb load. It is obsolescent, but still operates on quiet sectors on Russian front.



Parasol wing, radial engine and fixed landing gear are outstanding features. The Hs-126 can make 230 m. p. h. and has a 27,000-ft. ceiling.



Twin-boom observation plane, FW-189 has been adapted for ground attack, communications, supply and ambulance work. Its weak power plant (450-h.p. inlines) prevents it from being first-line combat plane. Glassed-in gondola looks like a bumblebee between the twin booms.

NEWS & MISCELLANY

NEWS

A recent intelligence report from the China theater indicates that the Japanese are now using three-engine aircraft. Several of these were seen during a Japanese bombing attack. Two of the engines are said to be in the wings, the third in the long nose. The wing appears to have a very long span and upturned wingtips. The airplanes observed were painted either yellow or orange.

•

From aerial photographs taken over Paramushiro it is believed that the following changes have been made in the Kuma-Natori class of Japanese light cruisers:

Antiaircraft: two mounts, probably 3-in., have been added abaft the No. 3 stack.

Torpedo tubes: two twin mounts abaft the bridge have probably been removed, replaced by two quadruple mounts. Two twins have been added abreast of the catapult; two more, port and starboard, between No. 2 and 3 stacks on the boat deck. This would indicate that these ships now carry 16 tubes, the twins being 21-in. tubes, the quadruple mount probably 24-in. As originally designed the class carried 8 torpedo tubes.

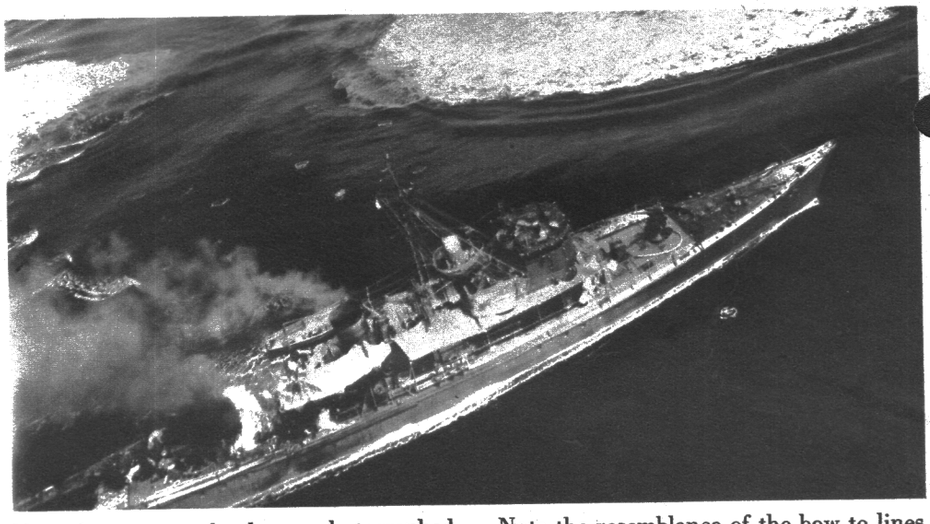
The appearance of the bridge has also been modified and a range finder has been added abaft No. 3 stack.

•

Supplement No. 1 to ONI 201, Warships of the British Commonwealth, has just been issued. This clarifies nomenclature and sequence of classes of British destroyers, particularly the relation of the two alphabets.

•

A Japanese subchaser of undetermined class was photographed near New Hanover, New Ireland in March 1944. It would seem to be a development of the PC 13 Class built from 1937 to 1942, formerly referred to as PC Class 40-47. The new ship is estimated to be 200 ft. long, 24 ft. wide. It displaces about 300 tons. It carries one 3-in. 40-cal. dual-purpose mount forward of the bridge. The gun is the same as one used in Jap shore installations. Some may carry small AA atop the bridge. Depth-charge equipment consists of two racks and two



New Japanese sub chaser photographed off New Ireland is described in text below. Note the resemblance of the bow to lines of typical Japanese cruisers and destroyers.

throwers located abaft the stack. Arbors with cradles for charges are stowed along the rail abreast the foremast. A degaussing strip can be seen below the rail. Estimated speed is 16–20 knots.

•

Though no armor has yet been found in wrecked or captured Zekes, a recent combat report states that a Zeke stood up well, neither burning nor exploding, under direct fire at less than 200 ft. This may indicate that Zekes are now carrying more protection.

•

Recently the Jap bomber Lily has been found with a dive brake fitted under the leading edge of each wing. This may indicate new uses for a standard Jap type.

•

Tony, type 3 fighter, may now be appearing with either two bombs, two fuel tanks or one bomb and one fuel tank under each wing for long range fighter-bomber use.

CORRECTION

The glider pictured on the lower right-hand corner of page 32 in the *Journal* for April is the Hengist, not the Hamilcar.

DISTRIBUTION

The *Journal* is distributed to particular activities in all armed services. It carries a restricted classification but should receive as wide a distribution as possible within the services. Limited numbers of additional copies are available. Requests for them and comments on the *Journal* should be sent through channels as follows:

From: Army Air Forces Activities
To: Training Aids Division
1 Park Avenue, New York, N. Y.

From: Army Ground & Service Force Activities
For copies, to: Appropriate A. G. Depots
For information, to: Training Literature & Visual Aids Division
Army War College, Washington, D. C.

From: U. S. Navy Units & Activities
To: DCNO (Air)
Training Literature Section
Navy Dept., Washington, D. C.

Any material published herein may be reproduced in any RESTRICTED publication of limited distribution as sponsored by any activity of the U. S. Army or Navy provided the private source of the material as indicated under "credits" in the *Journal* is acknowledged in such publication, and the *Journal* copyright notice printed on or below any pictures used.

QUIZ ANSWERS

QUIZ No. 1:

1. U.S. CV Enterprise; U.S. BB North Carolina Class; U.S. DD Benson - Livermore Class
2. Brit. CA Improved Southampton Class
3. German BB Tirpitz
4. Jap. CL Kuma Class
5. Brit. DD "A" to "I" Class
6. U.S. CA Portland Class
7. U.S. CA Wichita Class
8. German BB Tirpitz
9. Brit. CV Illustrious Class
10. U.S. DD Fletcher Class

QUIZ No. 2:

1. German 76-mm. Self-propelled Gun on PzKw 38 Chassis
2. German 75-mm. SP Gun on PzKw III Tank Chassis
3. German Armored Half-track Vehicle
4. German PzKw Mark V, Panther
5. U.S. Light Tank, M-5A1
6. U.S. Half-track Vehicle
7. U.S. 75-mm. Howitzer Motor Carriage, M-8
8. British Churchill Tank
9. German Half-track Car
10. U.S. T-70
11. Russian Medium Tank, T-34
12. U.S. 105-mm. Howitzer Motor Carriage, M-7
13. British Daimler Armored Car
14. British Cromwell Tank
15. U.S. 105-mm. Howitzer Motor Carriage, M-7

QUIZ No. 3:

1. Ju-87
2. PBY
3. B-26
4. B-24
5. F6F
6. Me-109F
7. Typhoon
8. F4F
9. P-39
10. SBD
11. OS2U
12. TBF
13. Hurricane
14. FW-190
15. P-38
16. B-25
17. Mosquito
18. Ju-88
19. Halifax
20. A-20
21. Sally
22. Stirling
23. Zeke
24. Me-110

QUIZ No. 4:

1. Sally
2. Me-109F
3. A-20
4. Mosquito
5. P-47
6. Zeke
7. Oscar
8. F4U
9. SB2C
10. Ju-88
11. Kate
12. P-51
13. DB3F
14. Me-210
15. Val

CREDITS

The pictures used in the *Journal*, unless otherwise specified (see *below*) came from the Allied Armed Services.

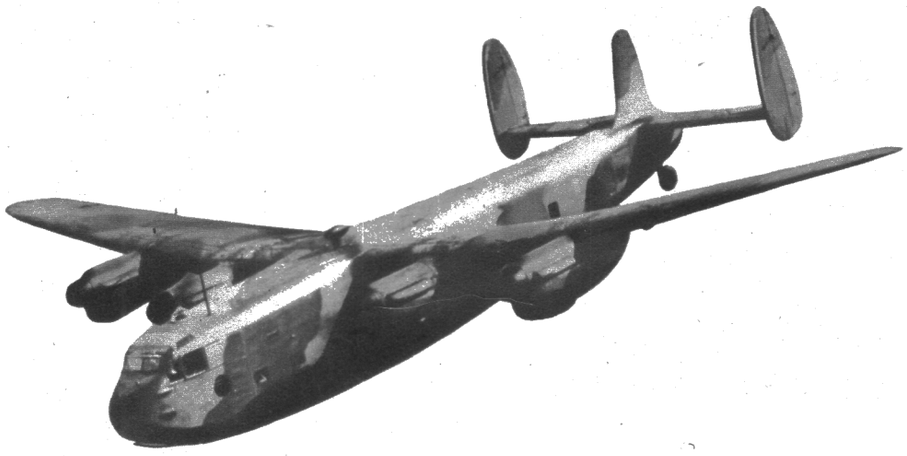
Cover—Sam Shere
3—Int.
6—Bot. left, E. A. Hamilton
12—Cen. right, North American Aviation Inc.
13—W. W.
24—Top, Walter B. Lane
25—Top, Frank Scherschel
28—Top, Eliot Elisofon
30—Top, J. R. Eyerman
31—Top, W. W.
34—Top, Wm. Vandivert
39—Top, London Daily Mirror
44—Bot. right, Paramount from A. P.

Abbreviations: A. P., Associated Press; Int., International; W. W., Wide World

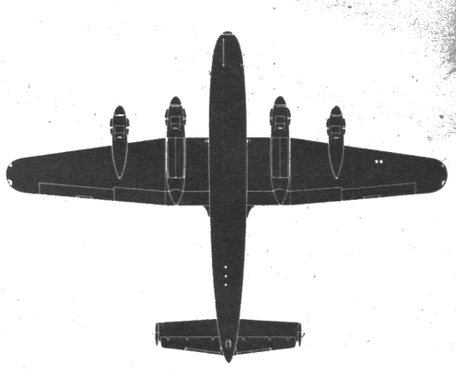
TRANSPORT

U.K.

YORK









DISTINGUISHING FEATURES: Four-engine monoplane with a high wing tapering on outer panel into rounded tips. Dihedral on the outer panel is sharp. The slab-sided, box fuselage is typically British. Outer fins, which look like guitar picks, are identical with Lancaster's. A third fin has been added in the center to increase stability. Inline engines are underslung. Tailplane shows moderate taper on trailing edge.
INTEREST: The Avro York is, next to the Ensign, the largest land-based transport ever built in England. Developed from the Manchester medium and Lancaster heavy bombers, the York can carry four jeeps or a dismantled Spitfire. The high wing gives ample propeller clearance on the ground, and enables the fuselage to sit low for convenient loading through panel on the port side. Maximum passenger capacity over 1,000-mile range is 56; operational cruising speed is approximately 200 m.p.h., about average for transport.

SPAN: 102 ft.
LENGTH: 78 ft., 6 in.
APPROX. MAX. SPEED: 285 m.p.h.
SERVICE CEILING:

MAY 1, 1944
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

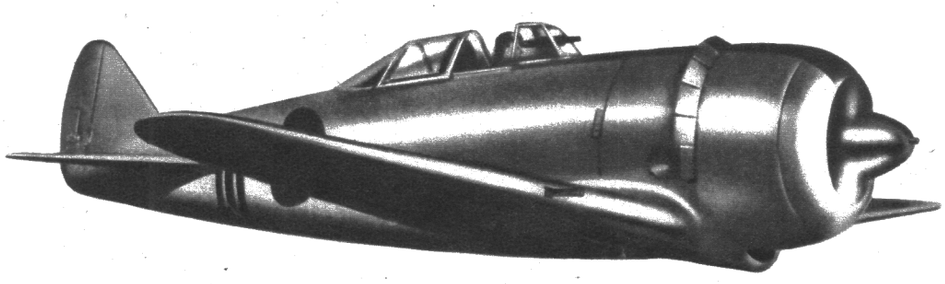
RESTRICTED

NOTE: This page is to be cut along dotted lines (*above and below*), added to the proper nation's section in the Recognition Pictorial Manual. The dots indicate perforations.

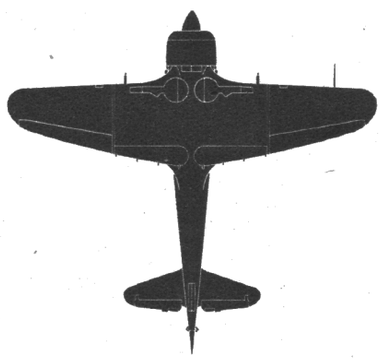
FIGHTER

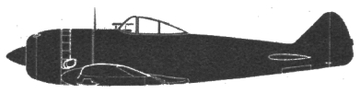
JAPAN

TOJO









DISTINGUISHING FEATURES: Single-engine, low-wing monoplane. Tojo has an elliptical wing similar to that of the P-47. Heavy round nose tapers to an oval aftersection, giving plane a stubby, compact appearance. The fin has gradual forward slope. Tailplane, set well forward of the fin and rudder, provides an excellent recognition feature. Cockpit differentiates models; Mark I is flat topped, Mark II streamlined. Also typically Japanese is the circular engine cowling.
INTEREST: Smallest, yet most powerful Jap single-seat fighter, Tojo shows a Seversky influence in wing and fuselage. It is fast and maneuverable and has the highest rate of climb of any Jap fighter. Lightly constructed, both its armor and armament are inadequate by U. S. standards. Mark I (shown in rendering) has a 1,250-hp. radial engine; the better known Mark II (silhouette), one of 1,450-hp. Tojo's maximum armament so far has been four fixed guns firing forward.

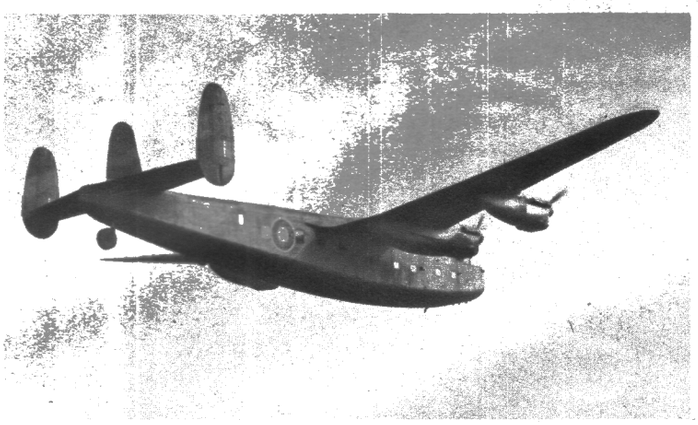
SPAN: 31 ft.
LENGTH: 29 ft., 2½ in.
APPROX. MAX. SPEED: 380 m.p.h.
SERVICE CEILING: 39,000 ft.

MAY 1, 1944
FROM DATA CURRENTLY AVAILABLE

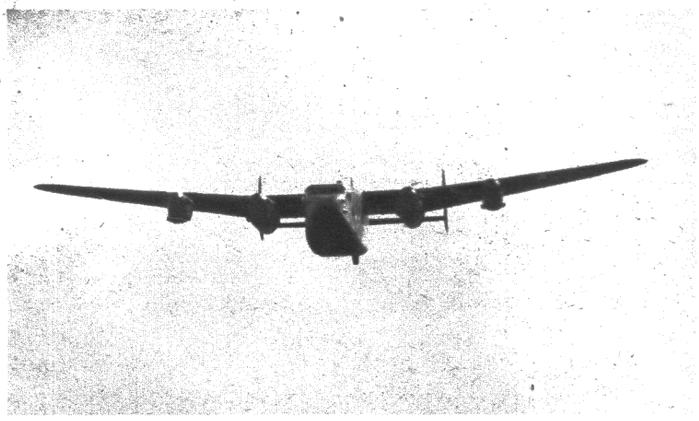
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAER 3

RESTRICTED

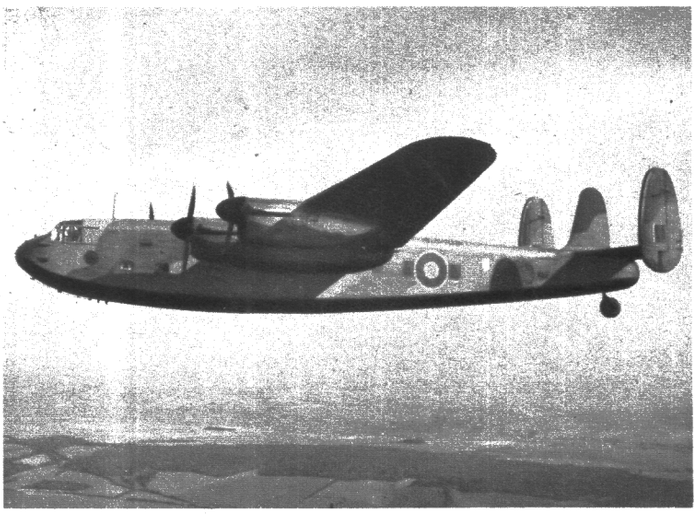
A



B



C



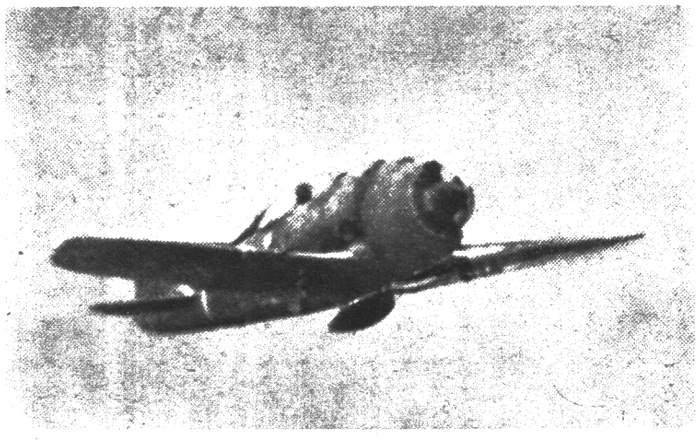
D



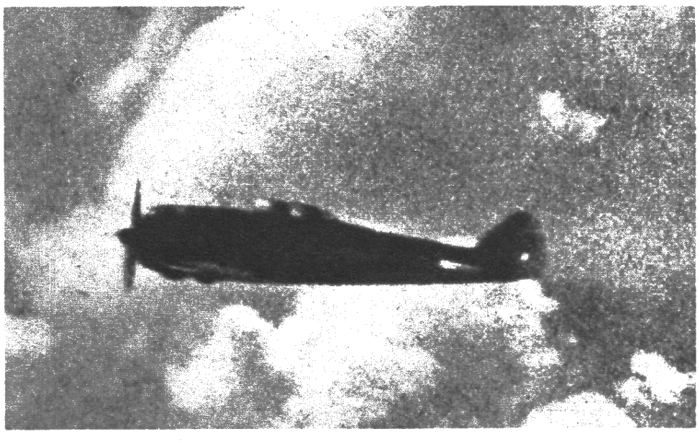
THE YORK, Britain's newest transport plane, is basically a Lancaster with a raised wing, an added fin and a new fuselage. It operates most efficiently at distances between 1,000 and 2,000 miles, may be used in postwar transoceanic service over Northern route.

TOJO is Japan's newest, fastest-climbing fighter. It carries the biggest, most powerful engine of any Japanese fighter. Although armor has sometimes been found on Tojo, it is still highly vulnerable to .50-cal. fire. Both plane and engine are manufactured by Nakajima.

A



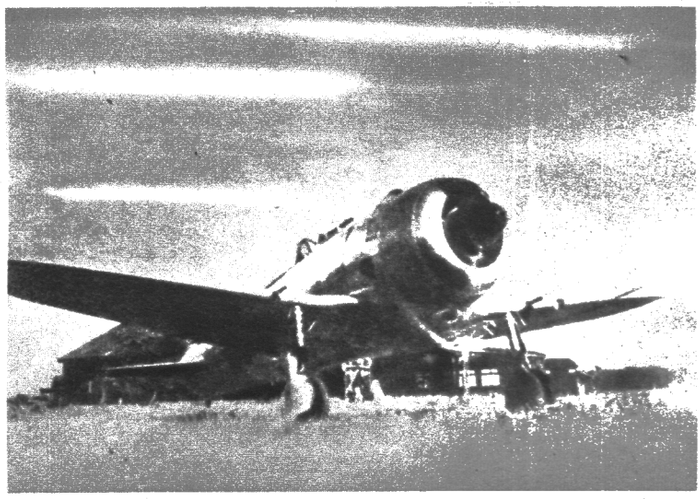
B



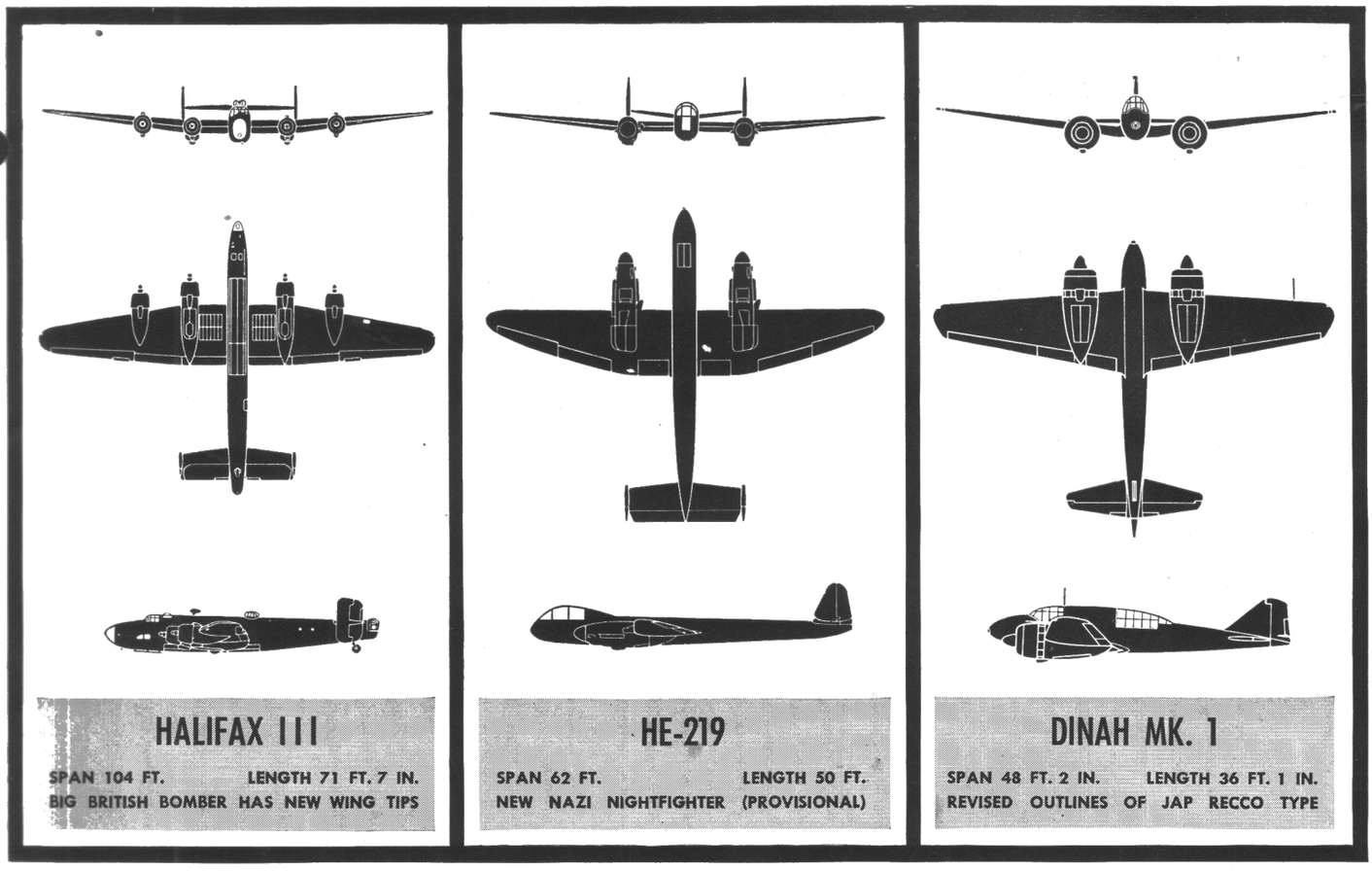
C



D



NEW AND REVISED AIRPLANE SILHOUETTES

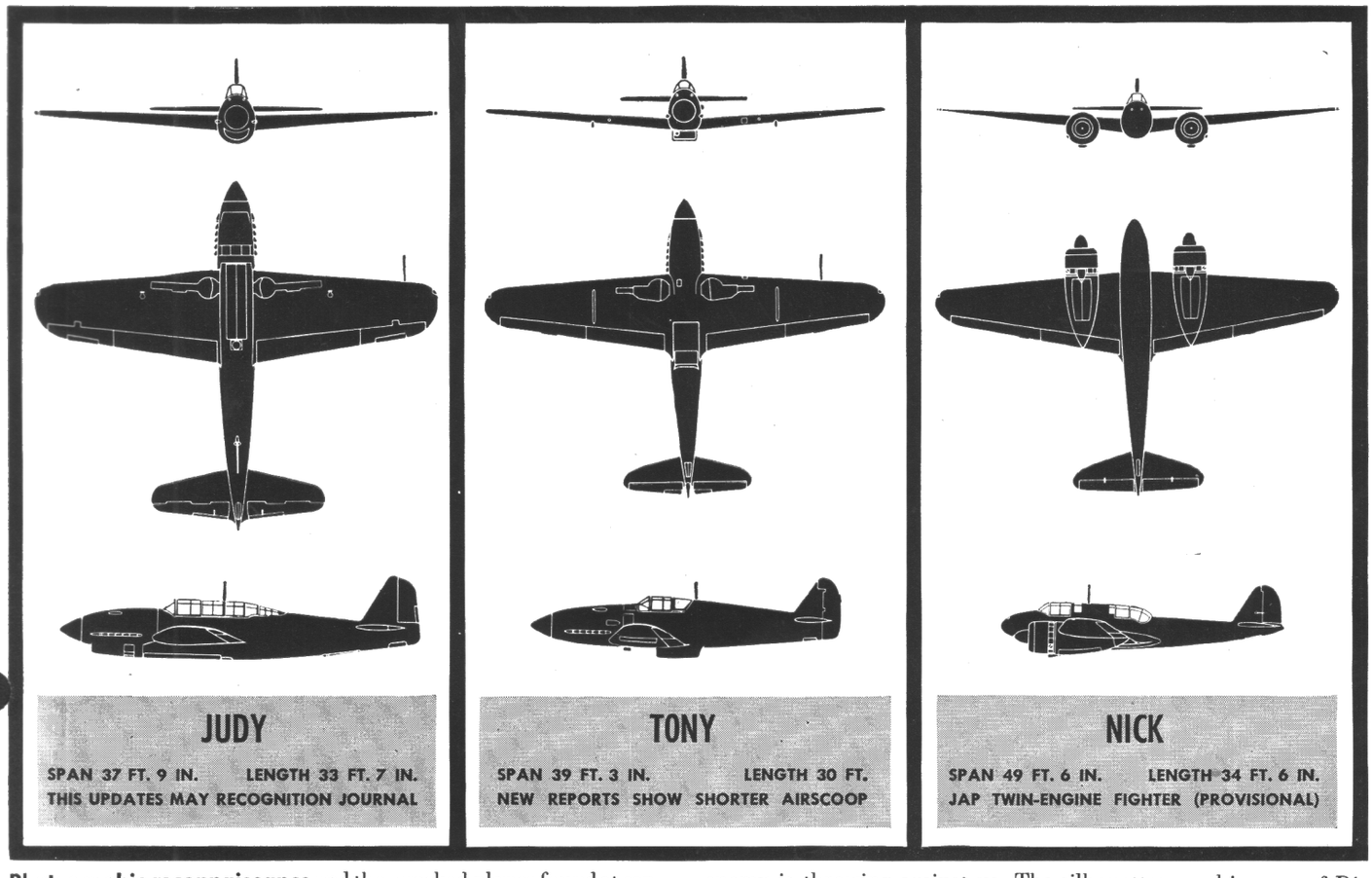


HALIFAX III
SPAN 104 FT. LENGTH 71 FT. 7 IN.
BIG BRITISH BOMBER HAS NEW WING TIPS

HE-219
SPAN 62 FT. LENGTH 50 FT.
NEW NAZI NIGHTFIGHTER (PROVISIONAL)

DINAH MK. 1
SPAN 48 FT. 2 IN. LENGTH 36 FT. 1 IN.
REVISED OUTLINES OF JAP RECCO TYPE

Radically different from any other airplane in the European theater, the new Heinkel twin-engine fighter should be easily recognized by its long thin fuselage, bulbous cockpit and twin tail. The Halifax III is now being manufactured with round wingtips but otherwise remains unchanged. The silhouette of Dinah shown at the right is the result of fuller intelligence now flowing in from the Pacific.



JUDY
SPAN 37 FT. 9 IN. LENGTH 33 FT. 7 IN.
THIS UPDATES MAY RECOGNITION JOURNAL

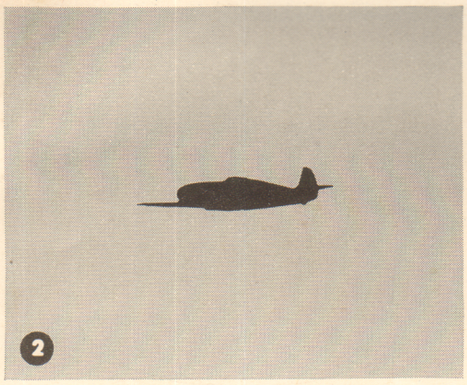
TONY
SPAN 39 FT. 3 IN. LENGTH 30 FT.
NEW REPORTS SHOW SHORTER AIRSCOOP

NICK
SPAN 49 FT. 6 IN. LENGTH 34 FT. 6 IN.
JAP TWIN-ENGINE FIGHTER (PROVISIONAL)

Photographic reconnaissance and the wrecked planes found at captured Japanese bases are supplying U.S. Army and Navy intelligence officers with much more detailed knowledge of the equipment our enemy is throwing against us. The silhouettes on this page of Dinah, Judy, Tony and Nick have all been revised as a result of this information. They should, however, still be considered provisional.

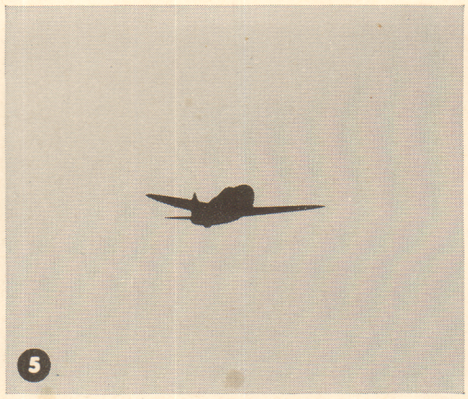
QUIZ NO. 4: TYPES FROM ALL FRONTS


1


2


3

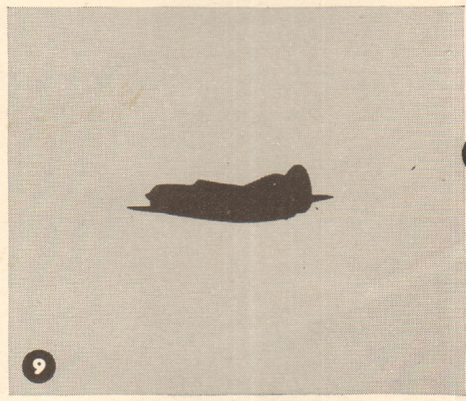

4


5

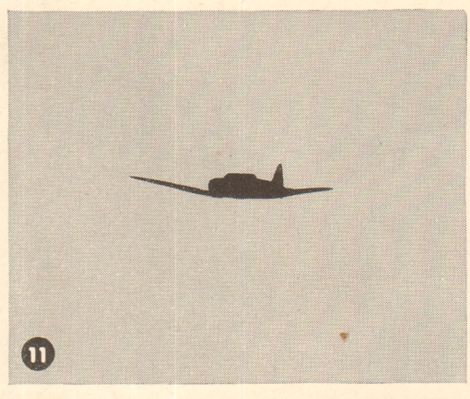

6

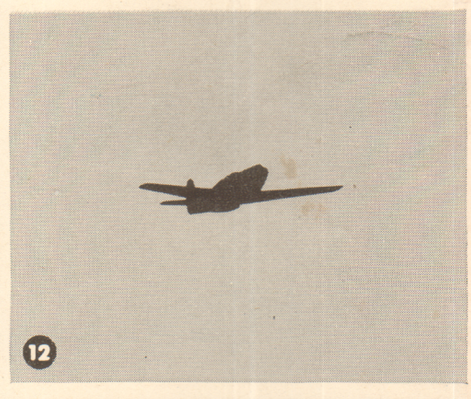

7


8


9


10


11


12


13


14


15

For answers see p. 48