

Commercial Air Giants Models for Fighters

U. S. Leads Way in Building Sky Dreadnaughts

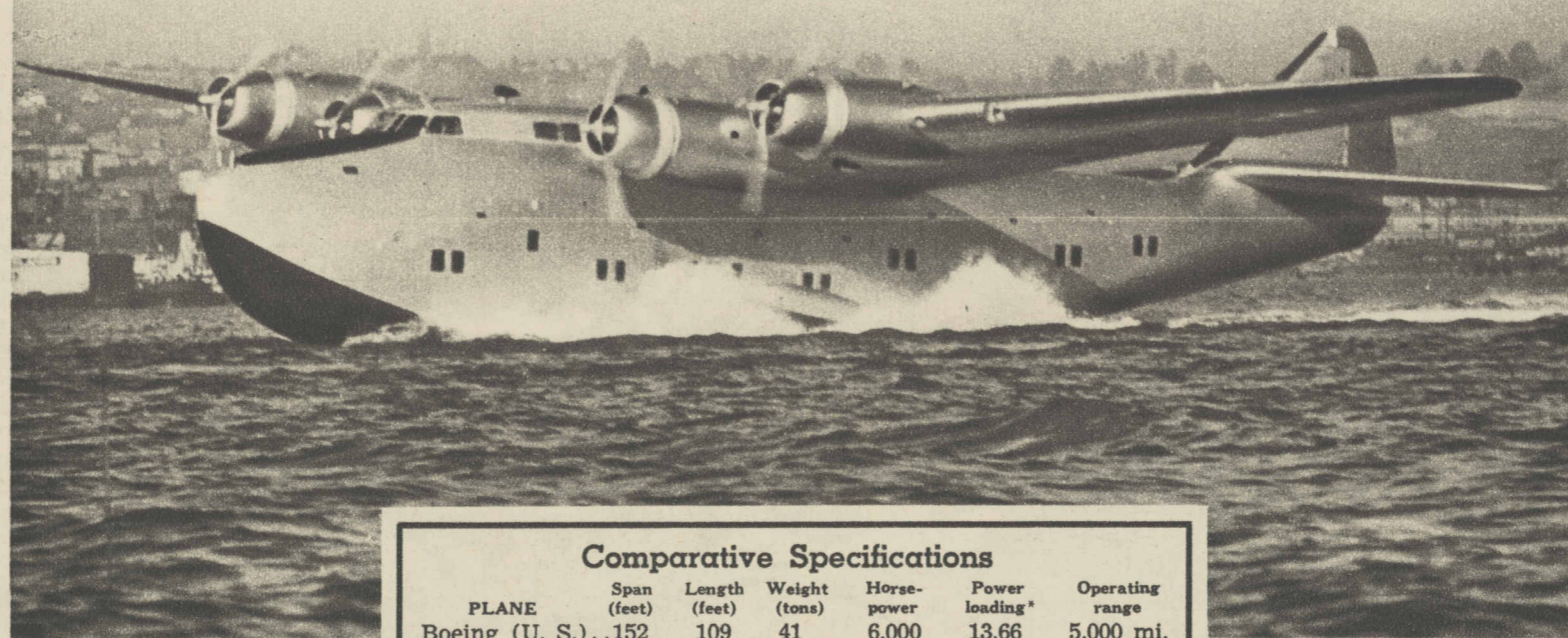
By WAYNE THOMIS

BOTH ENGLISH and American military experts have been converted to the large multi-engined long-range flying boat through the demonstrations over the Pacific and North Atlantic oceans during the last two years by Pan American Airways system and Imperial Airways. The airplanes ordered as a result are just now being delivered for service tests. These experiments will prove whether such big flying boats, with cruising speeds of about 160 miles an hour and ranges of 3,000 to 4,500 miles, will be able

All of these machines are four-engined monsters, capable of carrying large fuel loads, bombs, light cannon, and heavy machine guns for defense, and equipped with all the radio and direction-finding apparatus of a surface vessel of a thousand times their tonnage. Although they are considered large, our own navy department has announced it is planning to buy a plane that is from three to four times larger

(Acme photo.)

At right: Boeing's new Clipper takes off on a test flight.



er. The Pan American Airways 100-ton ocean plane upon which bids were asked last Dec. 9 will probably have a power loading of from 15 to 18 pounds, for the more load the engines will carry with safety the better the earning capacity of the machine and the more efficient its design.

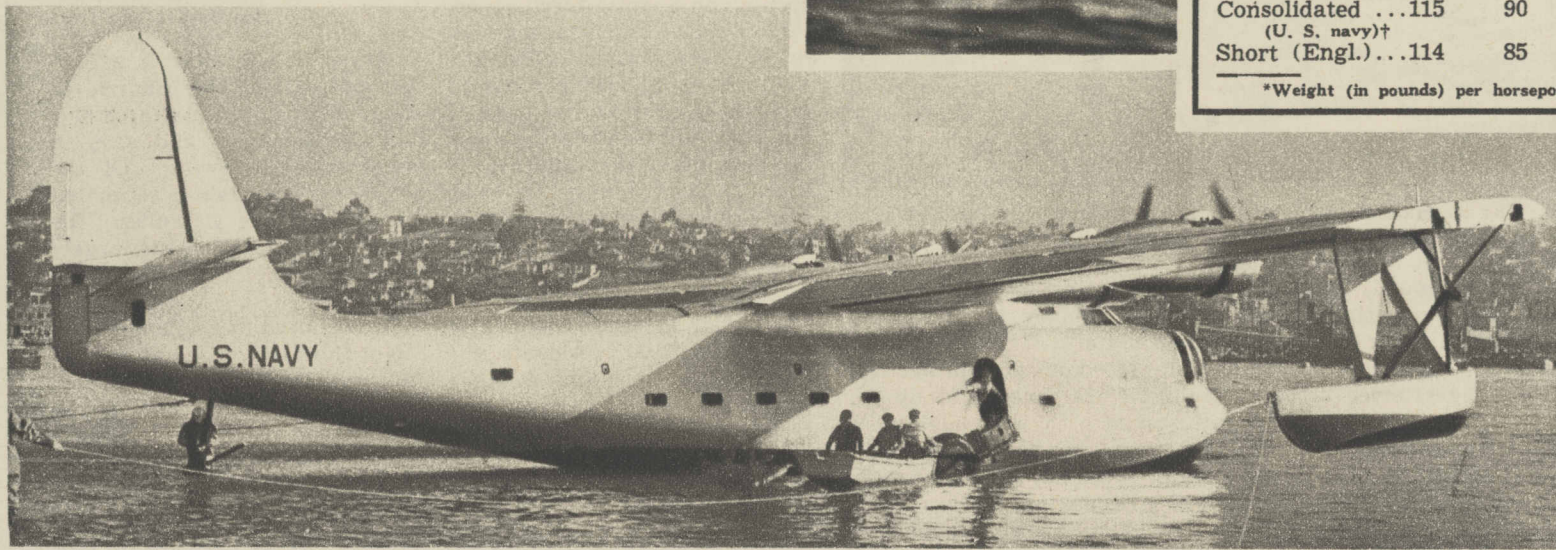
All these airplanes were constructed entirely of metal, with metal skins for the hulls and wings. In each case the motors are set in the leading edges of the wing, two to a side. In the Boeing boat and in the Consolidated boat mechanics will have access to the rear of the engines by crawling out passageways in the wings. In the British boat

(Photo from Tribune London Bureau.)
Below: England's newest flying fortress. Like the U. S. navy ship, it has a turret in its tail.

Comparative Specifications

PLANE	Span (feet)	Length (feet)	Weight (tons)	Horsepower	Power loading*	Operating range
Boeing (U. S.)...152	109	41	6,000	13.66	5,000 mi.	
Consolidated...115	90	30	4,920	12.19	4,500 mi.	
(U. S. navy)†						
Short (Engl.)...114	85	22.5	4,000	11.25	3,300 mi.	

*Weight (in pounds) per horsepower. †Estimated, unofficial.



(Acme photo.)

The Consolidated "flying battleship" launched recently for the navy. (Pictures of the three comparable flying boats discussed in this article are printed approximately to the same scale.)

to supersede the light cruisers and destroyers that now comprise the scouting forces of every nation's ocean fleets. The air officers privately insist that the big flying boats will ultimately take over these duties, but fleet line officers deny it.

At any rate the day of the big flying boat definitely is here. The United States navy has purchased two, one the Sikorsky "pocket battleship" and the other the Consolidated "aerial dreadnaught," described recently in this department. Within recent weeks the British Royal Air force has received the first of a number of Short Sunderland type boats which represent the military edition of Imperial Airways' new flying boats.

than any of these machines. And they are dwarfed already by the new commercial flying boats purchased from Boeing Aircraft company by Pan American Airways.

The accompanying table give a ready comparison of the planes' specifications.

The empty weight to useful load ratio cannot be given accurately for the Consolidated boat, since all its detailed descriptive material has been withheld from the public. These ratios can be given, however, for the British and Boeing boats, and they are considered important indications

of the efficiency of the airplanes. They are (see table for gross weights):

For the British boat the empty weight is 25,500 pounds and the useful load therefore 19,500 pounds. The ratio is 59:41. For the Boeing the empty weight is given as 48,865 pounds and the useful load 33,635 pounds. The ratio is exactly the same as for the British boat, being 59:41.

The goal for designers of all large airplanes is a ship which will carry a useful load of more than its own empty weight. Such a ratio would be expressed as 49:51. Thus it may be seen that

both the British boat and the Boeing plane are approaching the ideal ratios, and although widely different in weights and dimensions, they are approximately the same in load-carrying efficiency.

• • •

As a matter of fact, the Boeing ship probably is considerably more efficient than the British military boat, for the reason that some 7,000 pounds of its empty weight are represented by soundproofing and furnishings installed for the comfort of passengers and crew. The British boat, being a military machine, probably has a very small weight allowance for such luxuries. Since the exact amount is

unknown, this item will be disregarded.

Another important comparison made to determine the relative efficiency of large airplanes is the power loading. For large land planes the Douglas DC-3 might be taken as an example. On this machine the power loading is 13.7 pounds for each horsepower the engines can deliver at takeoff. For military fighters such as the Seversky P-35 the power loading is only 5.6 pounds for each horsepower.

The Boeing is a commercial airplane, and its engines must earn a profit. In its case the power loading is 13.66 pounds for each horsepower. The Consolidated, being a military plane, where takeoff, climb, and top speeds are considered without reference to production of dividends, the loading is somewhat lower, being 12.19 pounds per horsepower. The British boat has an even lower loading of 11.25 pounds.

As planes get even larger the power loadings will grow high-

the wings are not large enough for this and the only access to the engines is obtained when the machine is at rest on water or on its beaching gear.

These big boats are able to operate in virtually any weather except ice storms or through freezing fogs. Their ranges are so great that they are able to fly through or around storms they cannot fly over. Then can even buck much weather in which naval vessels would be unable to operate.

(Continued from page one.)

unhealthy, reminding them of albinos. Red hair is even worse, because only their witches and devils have red hair.

Bali, which has been called the "last paradise," probably comes as near to being the reality of one's dreams as any place on earth.

It was thirty years ago this summer that the last of Bali's independent rajahs was killed by Dutch soldiers and the island came under the political domination of the Netherlands.

Bali is about the size of Long Island, New York—a tropical garden spot clustered with high volcanoes, dark jungles full of monkeys, and rice fields beautifully irrigated and terraced by sturdy brown-skinned peasants. It is part of the Malay archipelago, which lies on the equator and in the volcanic belt of the world directly between China and Australia. Like the skeletal vertebrae of a gigantic fossilized sea monster rise the more than three hundred volcanic peaks that form the mass of the surrounding islands of Java, Sumatra, Borneo, New Guinea, and the Philippines. In this remote region live the birds of paradise, the orang-utans, the rafflesia (a flower more than three feet in diameter), and the giant "dragon" lizards of Komodo, none of which are found anywhere else.

The human inhabitants vary from the primitive apelike Negritos, Papuans, and Kubus to the highly civilized Hindu-Javanese, who as long ago as the fourteenth century built such jewels of eastern art as the monuments of Borobudur and Prambanan. But the island of Bali is but one small speck in all this, and there live the Balinese.

• • •

The Balinese are a people of contrasts. Along with what we would call primitive superstitions they have a remarkable enlightenment in many ways and have developed solutions to some of the problems that still irk the western world.

When a Balinese child becomes ill the blame often is at-



second application). Don't accept unknown substitutes. Be sure with safe, scientific Blue-Jay! Blue-Jay is a tiny medicated plaster. Easy to use—invisible. 25¢ for 6. Same price in Canada.

BAUER & BLACK BLUE-JAY CORN PLASTERS
REMOVE CORNS ROOT AND ALL

DROP THAT KNIFE!

CORNS COME BACK BIGGER—UGLIER

unless removed Root* and All

A KNIFE is always dangerous! Using it means the risk of infection. So don't take chances with old-fashioned home paring methods that only affect the surface of a corn—leave the root to come back bigger, uglier than ever. Follow the example of millions who depend on the new double-action Blue-Jay method, because they know it's safe, scientific, quick acting. Blue-Jay stops pain instantly by removing pressure, then in 3 short days the corn lifts out root and all (exceptionally stubborn cases may require a

*A piece of dead corn root-like in form and position. If left may serve as focal point for renewed development

Bali—Isle of Beauty

tributed to his name, and the local priest or witch doctor is summoned to give him a new and more propitious one. On the other hand, children are treated almost like grownups, and they develop early responsibility because of this. They are neither pampered nor disciplined, and their parents coax them into obedience rather than intimidating them. Balinese mothers have been taught to believe that if a child is beaten his tender soul will be damaged.

The character of the Balinese is widely assumed to be simple, as might befit the primitive, childlike people they are popularly supposed to be. But actually they are sophisticated, resourceful, and possessed of a keen, Rabelaisian wit. In mathematics they are facile, and some of the money changers, who are women, can add, subtract, multiply, and divide with the speed of an adding machine. A foreigner who wanted to test this ability reports: "We used to ask the women of our households for multiplications of numbers of several ciphers; with mysterious operations of a few kepengs [coins] spread on their laps they always found a quick and accurate result."

Far from being a childlike people, the Balinese are highly cultured and responsible. Their culture is in part due to the fact that when the eastward surge of Mohammedanism drove the intellectuals of Java into Bali they brought with them their classics and continued to write poetry and cultivate the arts of music, dancing, sculpture, painting, etc., in Bali. Virtually everybody in Bali is an artist; priests, peasants, coolies, princes, men, women, and children alike all are more or less trained in dancing, wood carving, acting, or singing.



(Ewing-Galloway photo.)

Balinese girl on the way to market.

Such western concepts as chivalry and puritanism have never penetrated Bali, and so there is no word in Balinese for the abstract idea of romantic love. The only words meaning love are very concrete and derive from the words "to like" and "to desire." The processes of courtship and marriage in Bali therefore are curiously direct in our eyes. It is common for a boy and girl to live together as soon as they fall in love. This

need not be done surreptitiously, for it is an accepted trial marriage and there are regulations that protect the girl against desertion in case of children.

The marriage customs themselves are primitively charming. Generally a make-believe abduction is enacted. The girl arranges for her clothes to be taken secretly to her future home, and on the appointed marriage day she is captured while bathing or walking along the road. The bridegroom brings along a few "best men" to help him subdue the kicking and biting girl and to fight off her relatives who may pretend to come to her rescue. Many spectators look on with delight, and after the bride's father has given the alarm a searching party is organized and vainly scours the neighborhood for the "lost" girl. A religious ceremony follows the honeymoon.

When Balinese want to amuse themselves they do not take to such mechanical western innovations as the radio and movies, which are to be found in the island's few commercialized half-European, half-Chinese towns like Den Pasar and Buleleng. Instead they go to see cockfights in the sheds built for the purpose in every village, and they dance and act and make music. For more intense excitement they have occasional participation in such emotional religious activities as those pictured on the front page, in which a legendary victory of monkeys over evil spirits is commemorated in order to keep the evil spirits suppressed, and the sacred symbolism of the kris (Malay dagger) is expressed in an orgy of self-inflicted torture.

Social life in Bali is very important, being closely bound up with religion and government. The caste system of strict class

distinctions came to the Balinese from their Hindu ancestors, and the people are long used to such rules as that no man may marry a woman of a caste higher than his own—but this sacred rule is becoming less rigidly enforced with each passing generation.

• • •

Law and justice in Bali depend much more on moral sanctions than physical punishment, and moral sanctions are extremely effective in a land where society is so close-knit and every man depends so much on the good will of his fellows. A punishment greater even than physical death to the Balinese mind is total banishment from one's home village, because it means the unfortunate victim becomes a complete outcast. He is never accepted in a strange village, and his countrymen sentence him forever with a fearful formula declaring him dead as far as they are concerned. Often he actually kills himself in his misery of loneliness and remorse. A bachelor in Bali is consid-

ered definitely abnormal, because the patriarchal system of the east has no place for bachelors and they cannot become members of the village association. Even the high priests marry in Bali, and all Balinese hope to have sons who will look after them in their old age and bury them with the proper rites for liberating their souls.

In personal cleanliness the Balinese are very fastidious and bathe several times a day, especially before breakfast and supper in the evening. Often they bathe in the large irrigation ditches that have been built almost everywhere in Bali in order to keep the rice watered, the women gathering in one place and the men in another. Both sexes observe propriety in showing themselves in public.

The paintings of Balinese girls on page one are the work of Miss Elisabeth Telling, formerly of Chicago, who visited the island in 1930. Miss Telling was born in Milwaukee in 1882, went to Smith college, and studied at the Art Institute of Chicago.

Remington

Reproduced in color on page one of the picture section of this issue are two famous paintings of soldiers by Frederic Remington, "The Mexican Major" and "There'll Be a Hot Time in the Old Town Tonight, My Baby!"

THE WORLD war began less than five years after the death of Frederic Remington, great American painter, whose delineations of soldiers in the field never have been surpassed. Had this artist lived on it is likely that the great conflict that raged for more than four years in Europe would have been recorded in realistic fashion for posterity through the magic of his brush. Remington was only 48 years old when his life was cut short by an attack of appendicitis.

The artist saw the Spanish-American war through his own eyes as an illustrator and a newspaper and magazine cor-

respondent. This explains how he was able to capture reality in his painting of an American soldier which bears the title "There'll Be a Hot Time in the Old Town Tonight, My Baby!" That, by the way, was a popular song back in 1898.

Remington as a youth rode the range as a cowboy in the cattle country. He also operated a sheep and mule ranch. In tagging along with cavalry troops as a young illustrator he often wandered into the picturesque land along the Rio Grande. There it was that he learned about Mexicans and obtained inspiration for the painting called "The Mexican Major."