8 FLIGHT

CATAMARA N FLYIN G SHIPS

An Air I Sea Compromise for Trans-ocean Travel?

T

O combine the advantages of both ocean liners and air-
liners for transatlantic and similar routes, a form of sea-
going vessel, capable of flight, has often been suggested.
A present-day champion of the scheme is an American veteran of both sea and air transport. He is Capt. James V. Martin, of the Martin Development Company, Rochelle Park, New Jersey, who flew in England in the early days; he received his R.Ae.C. Certificate No. 55 in February, 1911. In a description of a flying meeting at Hendon, printed in Flight of March 18th, 1911, we reported : "At 4.15 the three pilots, Messrs. Greswell, Martin and Hubert, came out on their respective machines, the Gnome-Bleriot, the 'New Baby,' and the Gnome-Farman, and practised the right-hand turn, which they all accomplished with success."

Whether equal success will come also to Capt. Martin's latest project is at present uncertain, but in a recent letter to Flight he has presented his ideas with emphasis and vigour. In brief, his submission is that modern sea liners are too slow and aircraft too dangerous for trans-ocean journeys, and that a twin-hull "flying ship," should be developed. Statistics for 1951, he says, show clearly that speed of crossing is a main factor in the choice of transatlantic trans-port, for more than twice as many travellers went by air as by sea. Safety is the second big factor which influences the choice, states Capt. Martin, who goes on to emphasize— or possibly over-emphasize—the shortcomings of modern land-based airliners.

The 160.000 h.p. of the liner United States is not inade-quate to provide higher speeds, he continues, but the avail-able power is wastefully used in driving the vessel through the water, instead of through the "atmospheric ocean," 775 times lighter and less resistant to motion. At present, as much fuel is required to obtain five knots speed above 20 knots as is required for the entire first 20 knots, and resistance to further increased speeds builds up rapidly. The central-hull type of flying boat offers improved speeds, but lacks wave stability and general seaworthiness. The only effective answer, he feels, is a twin-hull flying ship, which would use its main wing surface to lift the hulls gradually out of their deep draught of water, as the velocity increased. The weight of the entire vessel would then be transferred to "a compressed vortex billow of air rolling forward between the two hulls and under the central wing," both hulls being lifted above the water.
"The vertical inside walls of the twin hulls combine with the under-surface of the intervening wing and with the ocean surface to create an additional lift, plus a reduction in drag, so that the overall efficiency of the ship is 40 per cent higher when flying at a height less than 75 per cent of its wing chord above the mean waves than it would be if flying well clear of the ocean in free air."

From the viewpoints of seaworthiness, passenger comfort and speed, the catamaran flying ship would be superior to conventional surface-vessels, claims Capt. Martin. As 70 per cent of the earth's surface consists of water, the need for fast, safe, comfortable and cheap over-water transport is vital, and the scope of the flying ship would not be confined to passenger use, for freight and military applications exist also. The cost per passenger for transatlantic trips has been estimated to be half that by air; and the 300-ton flying ship with a crew of 23, carrying 500 passengers from New York to London in 10 hr offers in addition obvious advantages over transport by surface vessels.

The twin-hull flying ship would be classed as an ocean-surface vessel, for "it is not more strange to have a catamaran ocean vessel sustained aerodynamically than propelled by sails, which was the universal practice before the advent of steam power."
Thus, Capt. Martin concludes, it is inevitable that this type of flying ship will supersede all other trans-ocean craft. By using the available power now used in conventional ships

Designed to fly just above the ocean surface, the twin-hull flying ship
has variable outer-wing dihedral.

in this more effective manner, an immediate combination of the aircraft's speed and the surface vessel's safety is possibl These immediate prospects will be improved further as the use of atomic power for propulsion brings increased economy. By way of a postscript, it may be remarked that the con-ception, at least in smaller sizes of aircraft, is not a new one. Capt. Martin himself acknowledges the success of the Savoia-Marchetti S.55 twin-hulled flying boats of the early nineteen-thirties.

ROUNDING UP RABAUL

HOW Rabaul was first encircled and then neutralized formed

the subject covered by Episode 7 of the B.B.C. Television film Victory at Sea. From Guadalcanal, captured the previous year and now a major U.S. base, Kittyhawks, Hellcats, Dauntlesses Mitchells and Liberators were shown softening up the islands of Munda, Rendova and Bougainville before their storming by U.S. Marines.

The Seabees were seen making one of their incredible airstripconstruction efforts on Munda. The strip was completed in four

days and a Corsair was to be seen making the first landing. After Munda and Rendova came Bougainville itself. Australian advances in New Guinea and the occupation of atolls in the Admiralty and Mathias groups of islands to the north then completed the Allied ring around Rabaul.
Much of this episode consisted of captured Japanese film and was thus of particular interest. Two impressive shots were a fly-past over the Emperor of about 20 Kawanishi Mavis (Navy 97) flying boats, and a much larger formation of unidentified fighters.

Ground shots included an engine change, a Japanese "erk" vigoously polishing the wing of a Nakajimi Kate (Navy 97) and some

excellent close-ups of twin-engined Mitsubishi Nell (Navy 96) bombers taking-off from Rabaul for a heavy attack on Allied forces.
The episode ended with a sad but spectacular shot of the win of a Liberator breaking off after being hit by enemy fire.
Beneath the Southern Cross, as Episode 8 was entitled, cover the sinking of the German armed merchant ship Atlantis and the scuttling of the famous pocket-battleship Graf Spee in the South Atlantic. The increasing tempo of mounting Allied war production was indicated, together with the building up of the elaborate convoy system so necessary to ensure the safe passage of vit guns and tanks across the U-boat studded Atlantic.
Air shots included the launching by catapult of the Graf Spee's Arado reconnaissance floatplane and some really excellent view of Goodyear blimps patrolling Brazilian waters. The construction of the big airfield at Trinidad was also shown.