

## Aviation Feature

by John W. P. Taylor

**T**WENTY-FIVE years ago this month, the Battle of Britain was over. R.A.F. Fighter Command had won a great victory in the skies over Southern England, at high cost in men and aircraft. The Air Ministry hoped to re-equip some of the battered squadrons with the 170 Brewster Buffalo fighters that had been ordered in America, but flight trials by No. 71 Squadron soon showed that these tubby little aircraft were no match for the Messerschmitts against which they would have to fight in Europe. The Buffalos were, therefore, diverted to the Far East, to equip the squadrons defending Singapore.

The pilots were told that the Buffalos were faster and better than any Japanese fighters, none of which were thought capable of reaching a height of 20,000 feet. They based their combat tactics on this belief and the results were dis-

astrous. When the war spread to the Pacific in December 1941, the British squadrons found themselves in action against a fighter 'plane that was far superior to the Buffalo or any other fighter in that part of the world, and many of them died. The Japanese fighter that came as such a surprise was the Zero.

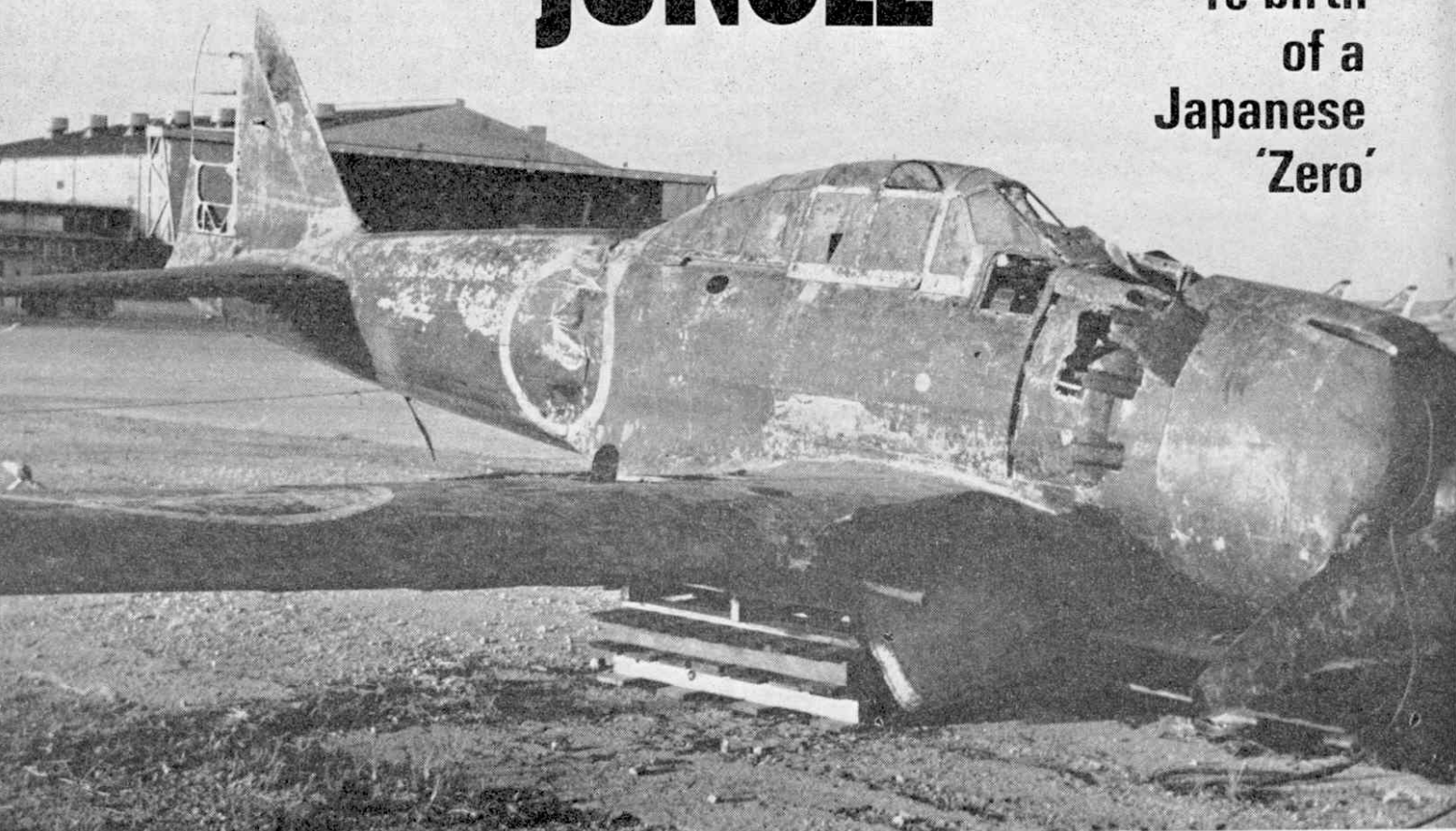
What makes the story all the more tragic is that the qualities of the Zero need have surprised no-one. The Japanese had used it in action against the Chinese as early as the Summer of 1940. American newspapermen in

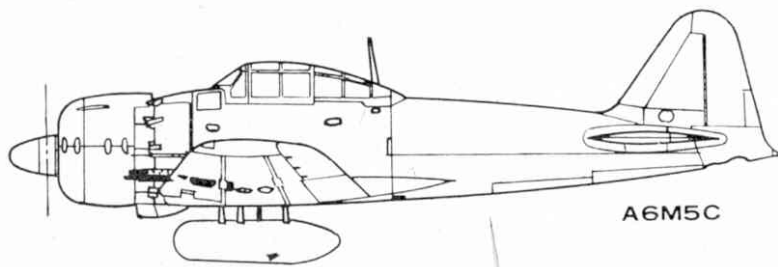
Chungking had described its capabilities and further details reached the Air Ministry from other sources in that city. Three months before the start of the Pacific war, this information was sent to the Far East, to warn Air Headquarters of the kind of enemy it might have to fight; but it never arrived. A detailed description of the Zero, written in Chinese, did reach Singapore in July 1941 and was translated. After that, apparently, it went into the pile of papers awaiting study by the R.A.F.'s makeshift intelligence section and was never read.

The early successes of the Zero earned it considerable respect among the allied air forces. Much of its reputation was well-deserved, but it had several weaknesses which the Japanese managed to hide successfully for many months. Then, on June 3, 1942, Flight Petty Officer Tadayoshi Koga ran out of luck after an attack on Dutch Harbour in the Aleutian Islands. Two bullets had holed his fuel system and it was clear that he would not be able to fly back to the aircraft carrier *Ryujo* from which he had taken off. He radioed to his flight commander that he intended to make for the island of Akutan, which had been chosen as an emergency landing field. It was there that an American reconnaissance party found him five weeks later—still in the cockpit of his Zero, upside down in a marsh, with a broken neck.

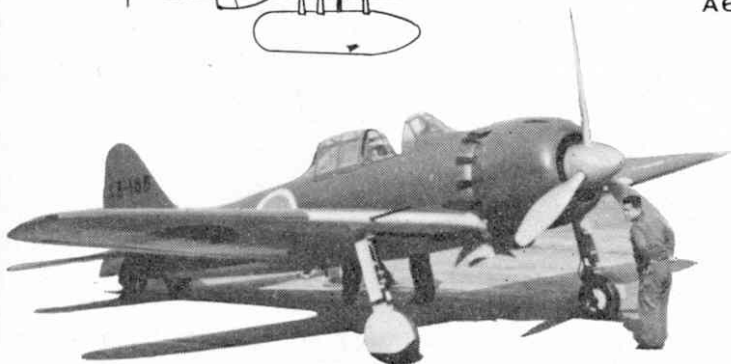
# BACK FROM THE JUNGLE

the  
re-birth  
of a  
Japanese  
'Zero'





A6M5C



Left: this is the aeroplane shown at the foot of the facing page after being beautifully restored to showroom condition



On floats, the Zero was known as the A6M2N. It was extremely useful for the Pacific war because it did not have to rely on vulnerable airstrips or aircraft-carriers

The Zero itself was hardly damaged, and the Americans lost no time in shipping it back to the United States. After repair and detailed examination of its structure, it was test flown extensively to discover its true performance and capabilities in mock combat with American fighters. From that moment, the myth of the Zero's invincibility disappeared, although it remained an aircraft to be treated with respect throughout the war.

It was to the Japanese people what the Spitfire was to the British, and a total of 10,938 were built, including 844 floatplanes and two-seat trainers.

The story of the Zero began on October 5, 1937, when the Japanese Navy invited the Mitsubishi and Nakajima companies to design a replacement for the Mitsubishi A5M carrier-based fighter. With its open cockpit and fixed spatted undercarriage, the A5M had a top speed of only 273 m.p.h. and was armed with only two machine-guns. For its successor the Navy wanted a speed of 310 m.p.h., the ability to climb to 10,000 feet in 3½ minutes, and an armament of two 20 mm. cannon and two machine-guns, combined with unexcelled manoeuvrability and range.

### The secret—lightness

Nakajima did not bother even to try to meet such demands; but Mitsubishi's chief designer, Jiro Horikoshi, decided to have a go. The best available engine was the Mitsubishi MK2 Zuisei 13 fourteen cylinder two-row radial, developing 780 h.p. To ensure good performance and manoeuvrability with such low power, Horikoshi had to go to great lengths to keep down the weight of his new aircraft. The forward part of the fuselage and the wing were made in one piece, which complicated manufacture and made maintenance and repair a nightmare. Later in the war, the self-sealing fuel tanks and armour protection for the pilot were removed, and lightening holes were drilled all over the place—even in the pilot's seat—to save weight, making the aircraft very vul-

nerable. Nevertheless, when the prototype flew on April 1, 1939, it was a remarkable aircraft for its time.

The first two prototypes, designated A6M1, were followed by a third with the new 925 h.p. Nakajima NK1C Sakae 12 engine. The added power enabled the aircraft to exceed easily the Japanese Navy requirements which had seemed so unreasonable two years earlier, and this version went into production as the A6M2. Fifteen were sent to China in July 1940. In the following month, in their first combat sortie, they dived from a height of 27,000 feet to attack defending fighters over Chungking, and shot all the Chinese aircraft from the sky in one quick pass.

Japanese naval aircraft of that period were given type numbers based on the last figure of the year in which they went into production. So, as 1940 was the year 2600, according to the Japanese calendar, the Mitsubishi A6M became type 0 to the Navy and Zero-Sen (Zero fighter) to the admiring Japanese people.

As the war progressed, it was produced in many versions, by both Mitsubishi and Nakajima, in an effort to

Standing in front of the restored Zero is Japanese modeller Yoshio Kohashi wearing wartime pilot's uniform. In the background is the Kawasaki 61 'Tony'



meet the growing might and efficiency of allied air power in the Pacific. The A6M5 and 6 had uprated Sakae engines, giving up to 1,210 h.p.; bombs were added to the guns for attacking targets at sea and ashore; and Zercs carried countless volunteers to their death in suicide dive attacks on U.S. and British warships. The final A6M8c version was even more powerful, with a 1,500 h.p. Mitsubishi Kinsei engine and speed of 358 m.p.h., but before it could enter service the war was lost for Japan.

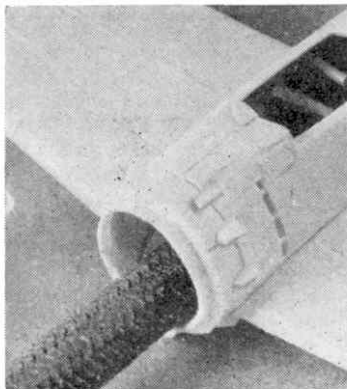
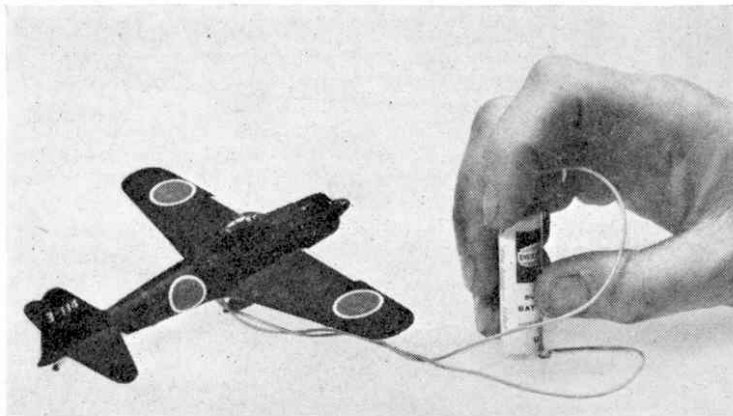
So complete was the defeat that not so much as a propeller or wingtip of a Zero could be found in Japan a few years ago, as a relic of this phase of the nation's aviation history. Then, in the Spring of 1962, a group of telephone engineers found a damaged Zero whilst working in a fresh water swamp on the island of Guam. A row of bullet holes spaced across the starboard wing and into the radio, just behind the cockpit, a bent propeller and closed cockpit hood told their own story of a belly landing from which the pilot walked away.

After the fighter had been fished out of the mud and water, and washed down, its metal parts were found to be in a good state of repair, despite at least 17 years of immersion. An American journalist named Dale Willoughby saw the remains resting on a pallet at the end of the runway at the Naval Air Station, Agana, Guam, photographed them and sent prints to the editor of the Japanese aviation magazine *Koku-fan*. Their publication was followed by a request from the Japanese Government to the U.S.A.F., asking if the Zero could be rescued from the scrap-heap.

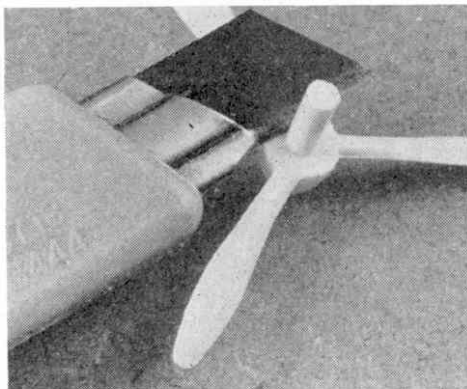
On January 17, 1964, the Zero was flown in a Lockheed Hercules transport to Gifu, near Kyoto, the old capital of Japan. Hundreds of hours of patient work by volunteers of the Japan Air Self-Defence Force restored it to immaculate non-flying status, and the Zero now stands, side-by-side with a Kawasaki 61 'Tony' fighter, on the Gifu airstrip.

# CONTACT!

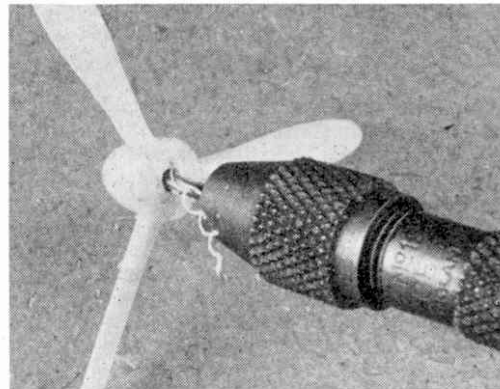
The new Mabuchi 'Baby' motor is so small that it can easily be fitted inside a 1/72 scale plastic model. DOUG McHARD did just that with a Revell 'Zero' kit and took some photos to show how easy it was.



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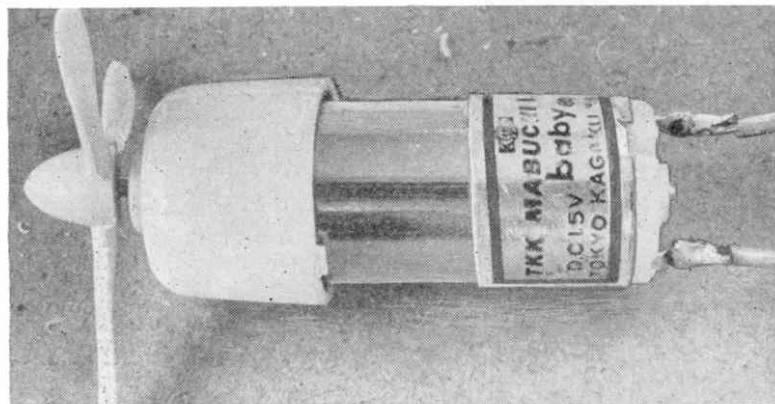


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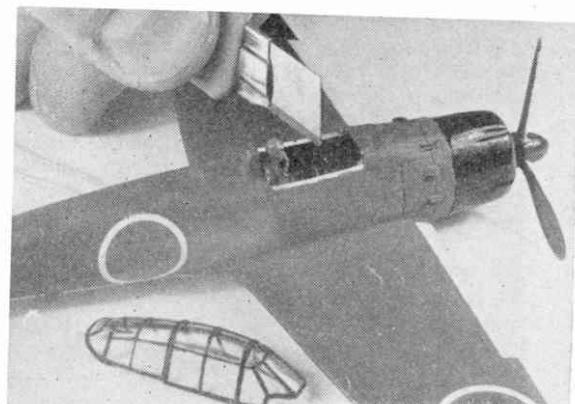
Photo 1. Assemble the wing and fuselage, wait until the cement dries, and then, with a round file, enlarge the cowling hole until the motor is a nice 'push fit'. Part of the upper surface of the wing centre section will also have to be filed away to enable the motor to be pushed fully back into the fuselage. If you haven't got a round file, you can use coarse garnet paper wrapped round a short piece of  $\frac{1}{4}$  in. dia. dowel

Photo 2. The projection behind the propeller must be carefully removed with a sharp knife

Photo 3. With the drill firmly mounted in a pin chuck, carefully drill out the boss to take the motor shaft. Check continually during the drilling operation to make sure the hole is not running 'out of true'. A number 53 drill is just the right size for the job and the propeller should be fixed to the shaft with a drop of contact adhesive such as Bostik 1, AFTER fitting the cowling in place!



4



5

Photo 4. Bend the two motor tags back and solder two 6 in. lengths of thin plastic covered wire to them. If you are unable to solder, you must make the connections by threading the wire through the tag holes and twisting it back on itself. The joint should then be tightly bound with thin Nylon thread. When the motor is in place, the wires emerge from the fuselage through the underside slot intended for the stand fixing. (This picture is TWICE life size!)

Photo 5. The model may be left in its unpainted (light grey) state or the upper surfaces may be painted matt dark green. Paint should be applied with a fairly large (No. 4) brush and remember—two thin coats are better than one thick one! Polystyrene cement does not stick to painted surfaces so when you fit the cockpit cover you must carefully scrape away the paint from the surfaces to be joined. You will probably find it easier to paint the cockpit framing before fitting it in position. There are many other models that are equally simple to adapt to take the 'Baby' electric motor. It costs 5/11, works off a 1.5 volt pen cell and you can get one from Rip-max Models and Accessories, 80, Highgate Road, London, N.W.5

As a further refinement, why not conceal the battery in a stand base? Another idea is to house the little battery in the back of a dummy re-fuelling tanker—the wire leads then become the fuel lines!



**NEXT MONTH—How to build a model of the famous British airship R-100**