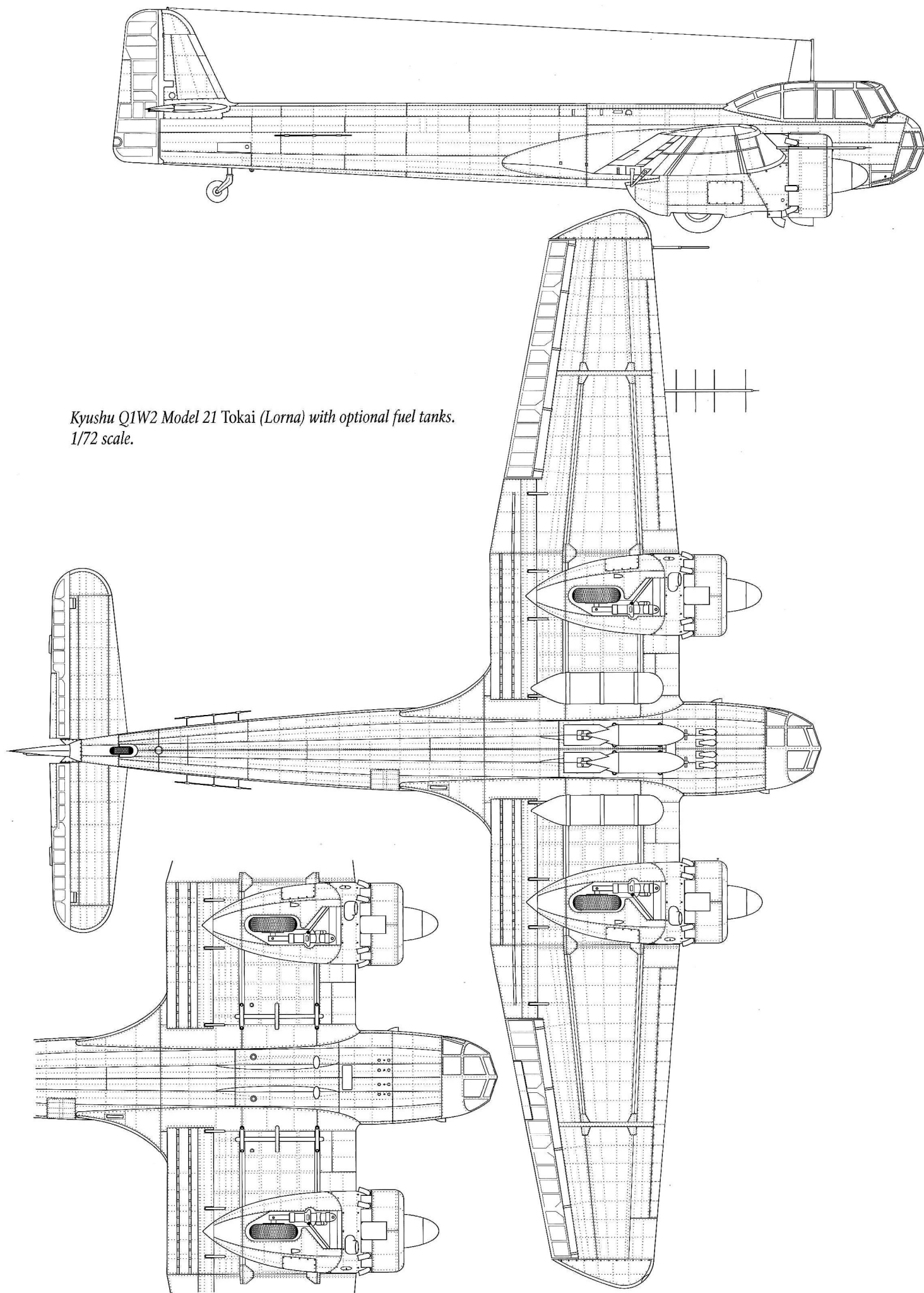
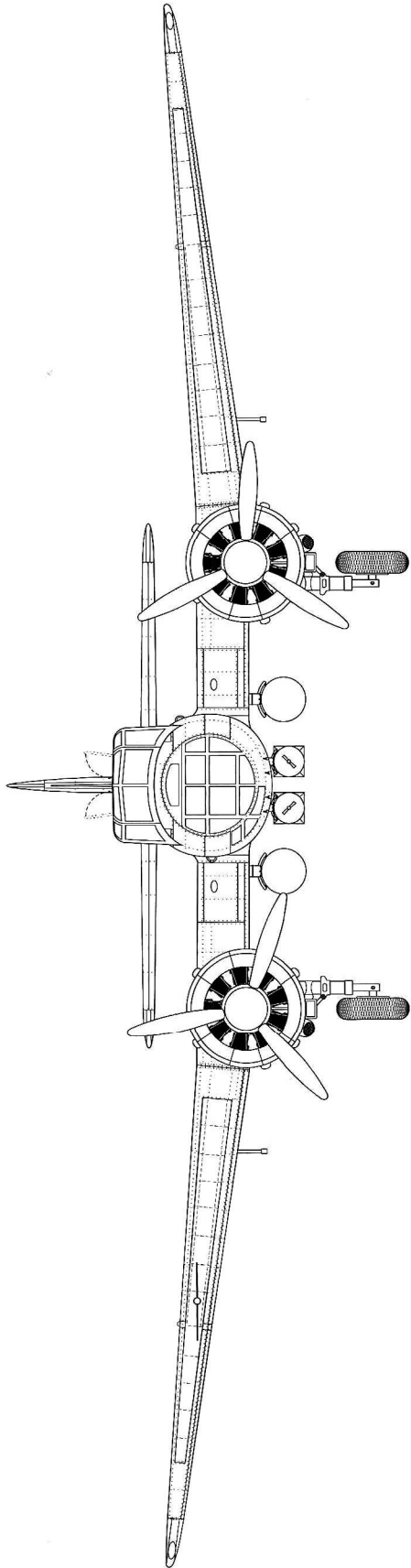


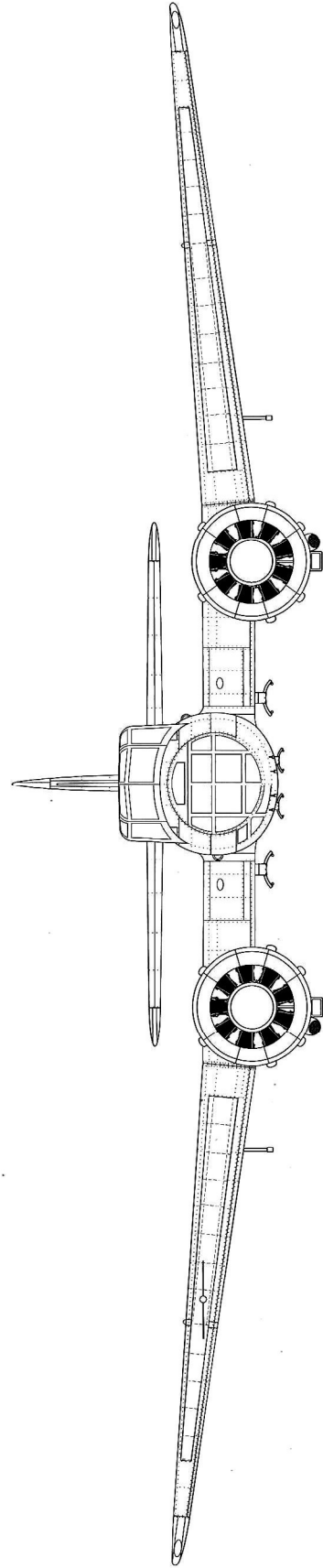
Kyushu Q1W1 Model 21 Tokai (Lorna). 1/72 scale.

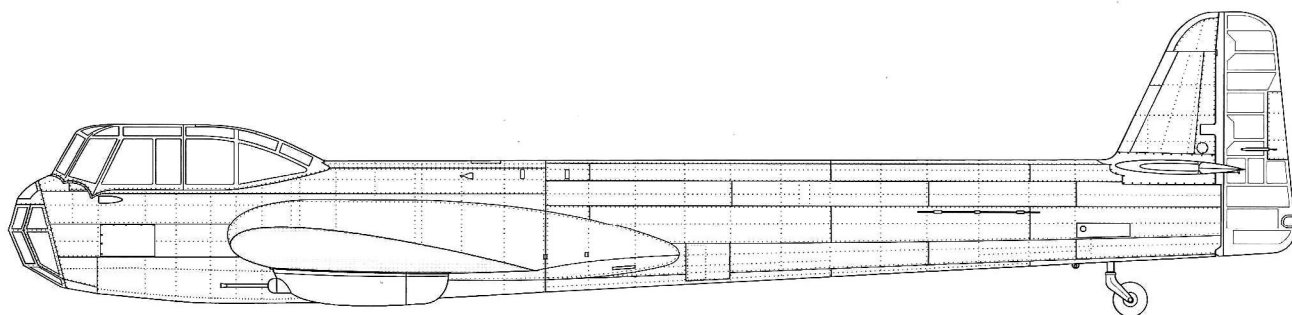


*Kyushu Q1W2 Model 21 Tokai (Lorna) with optional fuel tanks.
1/72 scale.*

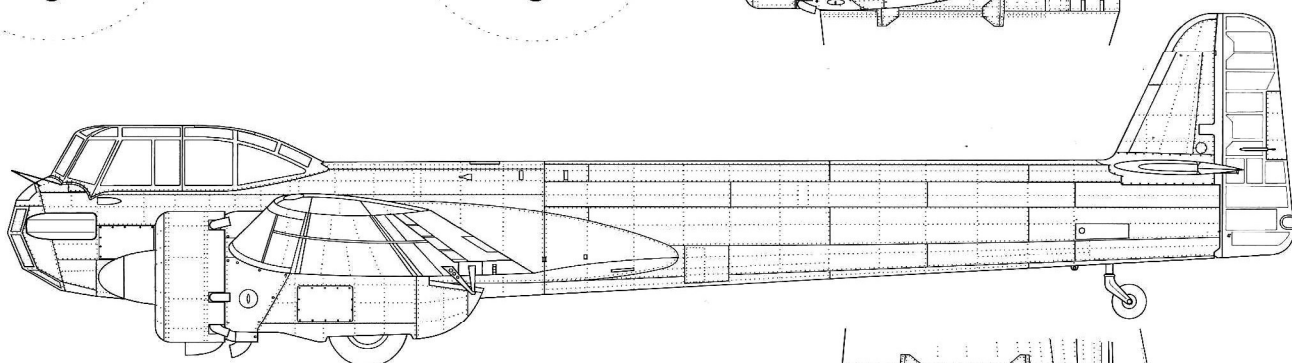
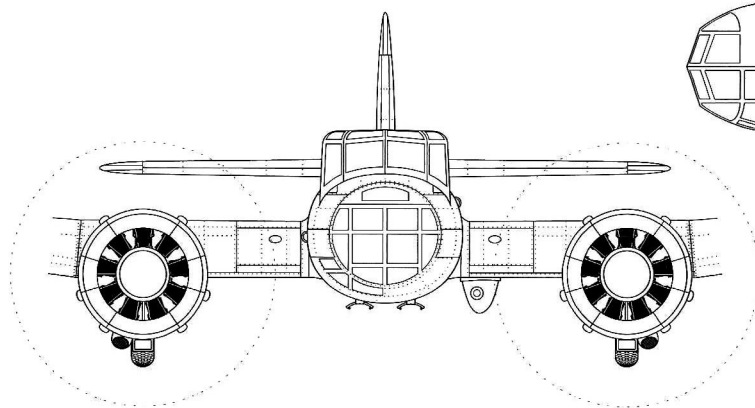
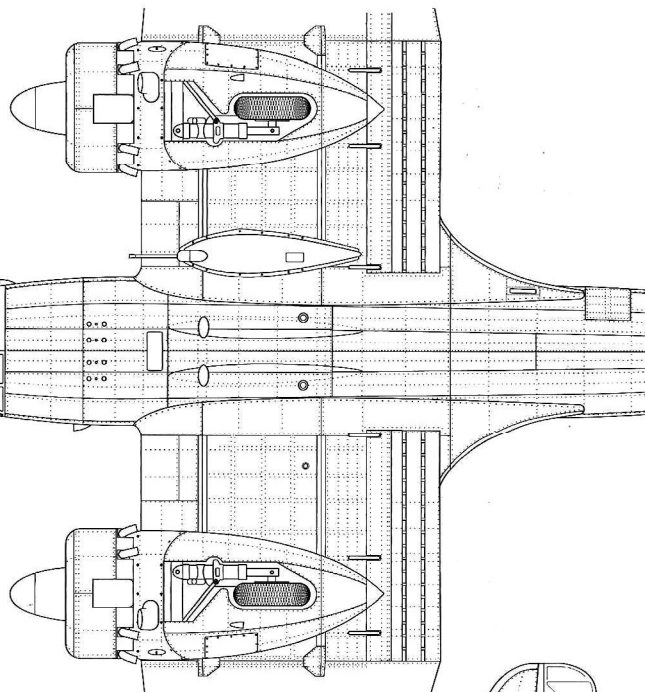


Kyushu Q1W2 Model 21 Tokai (Lorna) with optional fuel tanks. 1/72 scale.

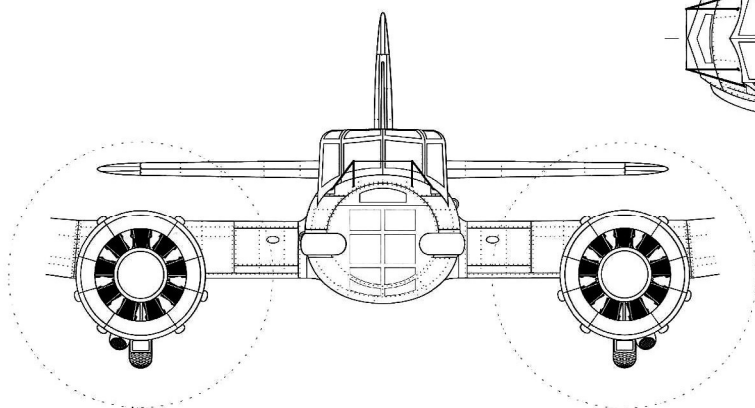
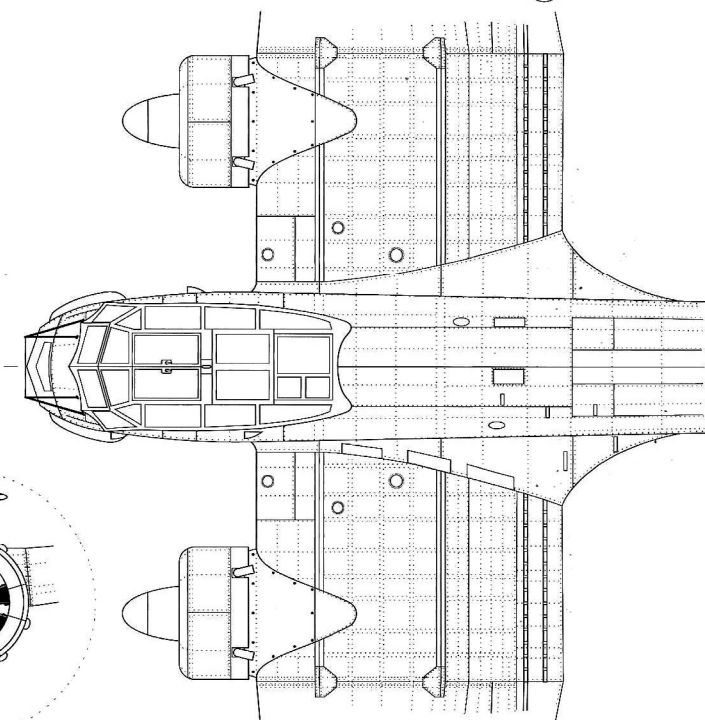




Kyushu Q1W1 Model 11 Ko with 20mm gun pod. 1/72 scale.



Kyushu Q1W1-K Tokai-Ren. 1/72 scale.



Just before the end of the war a dual-control version of the aircraft was created, under the designation Q1W1-K *Tokai Ren*. It was a mixed structure with wooden elements, a crew of four, designed to train electronic equipment operators and for fast training of the Kugisho PIY *Ginga* land-based bomber crews. In July 1945 this version was officially accepted for series production. No matter how valuable the initiative was, it came too late. When Kurashiki Koku Kako finished assembly of the first Q1W1-K prototype, the war had ended. The training version was easily distinguishable from the standard one due to characteristic bulges on both sides of the front of the fuselage, created to house the front seats of the crew members which were installed abreast. Its nose was solid and fake windows were painted to camouflage the trainer type. Just in front of the cockpit, a thin horizontal wire was fixed. This was not an antenna, but a horizontal marker for the trainee. They could check the aircraft was keeping horizontal during take-off and landing.

Technical data

- **Description:** Twin-engine cantilever low-wing monoplane patrol aircraft (Q1W1, Q1W1 *Ko*, Q1W2) or trainer (Q1W1-K), with retractable undercarriage.
- **Fuselage:** metal semi-monocoque structure with elliptical cross section, covered with duralumin plates. Front of the fuselage glazed on metal framework, seating three or four (Q1W1-K) crew members. Front glazed part of the fuselage in prototype aircraft had additional symmetrical observation windows in the floor, windows in the production version were placed in the right side of the fuselage. On the left side of the fuselage there was an extendable step for access to the wing centre section. The Q1W1 *Ko* version, fitted with one 20 mm cannon under the wing root had additional observation windows in both sides of the fuselage. Wing attachment points were at the 8th and 11th ribs, and between 17th and 18th ribs there was a flare dispenser (with five flares) and the dispenser hatch accessible by the pilot.
- **Cockpit:** Crew seats were placed in the front of the fuselage to facilitate visual detection of surfaced submarines. Cockpit was covered by a large glazed canopy with a crew entry hatch. The pilot's seat was placed in the front port side of the fuselage, the observer's seat was at the back, on the starboard side. Radio operator was seated behind the pilot. Below the pilot and observer's seats there were windows for observation of the operational area. The prototype had a two-piece crew entry hatch, placed in the canopy above the pilot's seat. Later versions had the hatch installed above the observer's seat (the back part of the canopy was lifted). The Q1W1-K version had a four-seat cockpit. In this case in the front part of the cockpit there were two seats (for pilot and instructor). The controls were doubled. That is why characteristic bulges could be seen on both sides of the fuselage. The other seats were installed similarly to the standard version. The Q1W1 aircraft were equipped with two different instrument panels. The first versions were fitted with an autopilot system whose controls were placed in the middle of the panel. The system was removed from later versions, thus the instrument arrangement changed.
- **Tail unit:** Structure similar to that of the wings. Vertical tail was all metal. Rudder, with trim tab, had metal structure covered with fabric. Right and left deflection was 30°. A white navigation light was placed in the lower part of the rudder. Vertical stabilizer of the production version had a larger area than that of the prototype. Two-part, single spar, cantilever, trapezoidal horizontal stabilizer had rounded tips, and all metal structure. Span of the horizontal stabilizer was 5.4 m. Elevators had metal structure covered with fabric, and were fitted with trim tabs. Incidence of the tailplane was 2°.
- **Undercarriage:** After take-off it retracted partially back into the engine nacelles, but half the diameter of the wheels was left exposed. Main undercarriage had a wheel track of 4.6 m and was fitted with low-pressure tires for airfield operation. Wheels were fitted with drum brakes. Wheel dimensions – main 725x200 mm, fixed tail wheel 350x120 mm.
- **Wings** To simplify the aircraft's structure, its cantilever wings were in three parts with rectangular centre section and rounded trapezoidal outer sections. The overall wingspan was 16 m. The wing centre section had a span of 5.8 m. The wing centre section had no dihedral and its angle of incidence was 4°30'. Outer sections had a dihedral of 6°. The most interesting structure was that of the flaps. They were a unique design of the Kyushu Hikoki company. They were slotted flaps with a long chord, with two slats at 45% and 75% of the chord. A hydraulic mechanism could set the flaps from 0 to 90°. During landing the flaps would be lowered to 90° at an airspeed of 71 knots (131.5 km/h). While dive bombing at an angle of 75°, airspeed was limited to 170 knots (314.8 km/h). In this phase of the flight, aerodynamic brakes were not used. Ailerons of metal structure were covered with fabric. Their deflection was 20° up and 25° down. The wing centre section housed two integral fuel tanks, 600 l each. To avoid turbulent

Two Q1W1 on an
airfield after the
surrender.



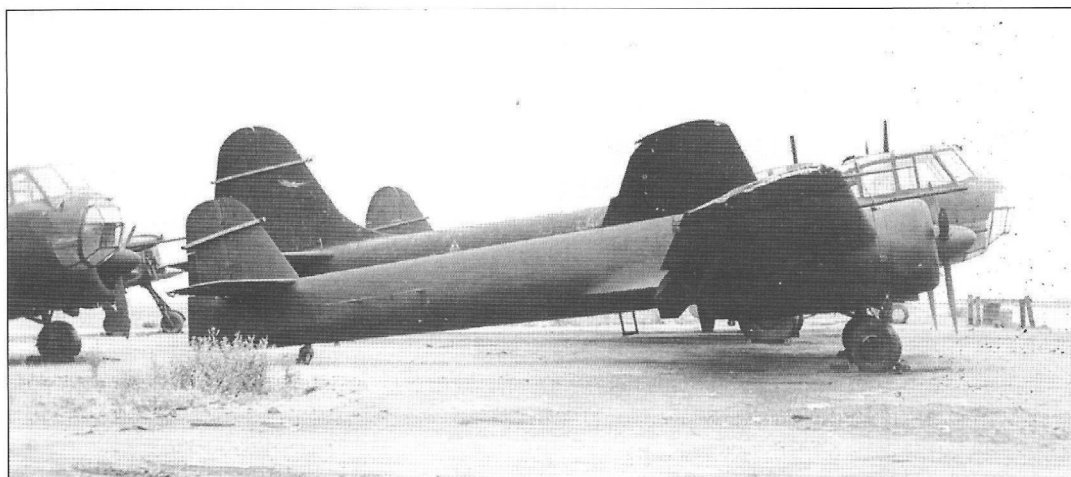
air flow over the engine nacelles, the engines were mounted lower to minimize the bulge over the upper wing surface. Navigation lights were installed in the rounded wing tips and the pitot tube was in the right wing.

- **Defensive armament:** Basic defensive armament of the aircraft comprised a single flexible Type 92 7.7 mm machine gun mounted in the rear part of the cockpit. In September 1944 one of the Tokai aircraft was experimentally equipped with the 3-Shiki 1-Go Kokuyo Tanchiki magnetic detector and armed with one fixed Type 99 Model 2 20 mm cannon for strafing surfaced submarines. The cannon was asymmetrically mounted in a special fairing at the root of the wing, and replaced the Type 92 7.7 mm machine gun in the observer's cockpit. This variant was designated Q1W1 Ko Tokai Model Ko and entered production in February 1945. Considering the right wing radar device, this cannon is thought to have been installed under the left wing root. From the ease of availability of a 20 mm cannon pod, it is possible that they used the extra gun pod of the Kawanishi N1K1 Shiden
- **Power plant:** The aircraft was powered by two nine-cylinder air-cooled radial Hitachi GK2C Amakaze 31 engines producing 610 hp each, mounted in nacelles with a spacing of 4.6 m, fitted with three-blade, metal propellers with spinners, with variable pitch and a diameter of 2.5 m. Their cowling was very compact, with single exhaust pipes. Under the cowling there was air intake. The engines gave low fuel consumption and long range. The attachment was also very rigid and maintenance was very easy. These characteristics were very important during long operational flights over vast sea areas.

Colors used by Kyushu Hikoki aircraft including the Q1W

We found the following official letter, which was sent from Kyushu Hikoki to Toa Chemical Refining Company on May 12, 1944. It states that Kyushu Hikoki sent Toa Chemical the order note of colour paints needed for the coming six months (from June to November in 1944) and the list of paints is also attached to the letter. The surprising thing is they mentioned the colours by the colour code of *Kariki* 117. Until today, it was known that the document *Kugiho 0266* (The research of A6M camouflage)" mentions colour codes, but this is the second official document that mentions colour codes. In the manual of the Q1W, it states that the cockpit panel should be painted with Green D1.

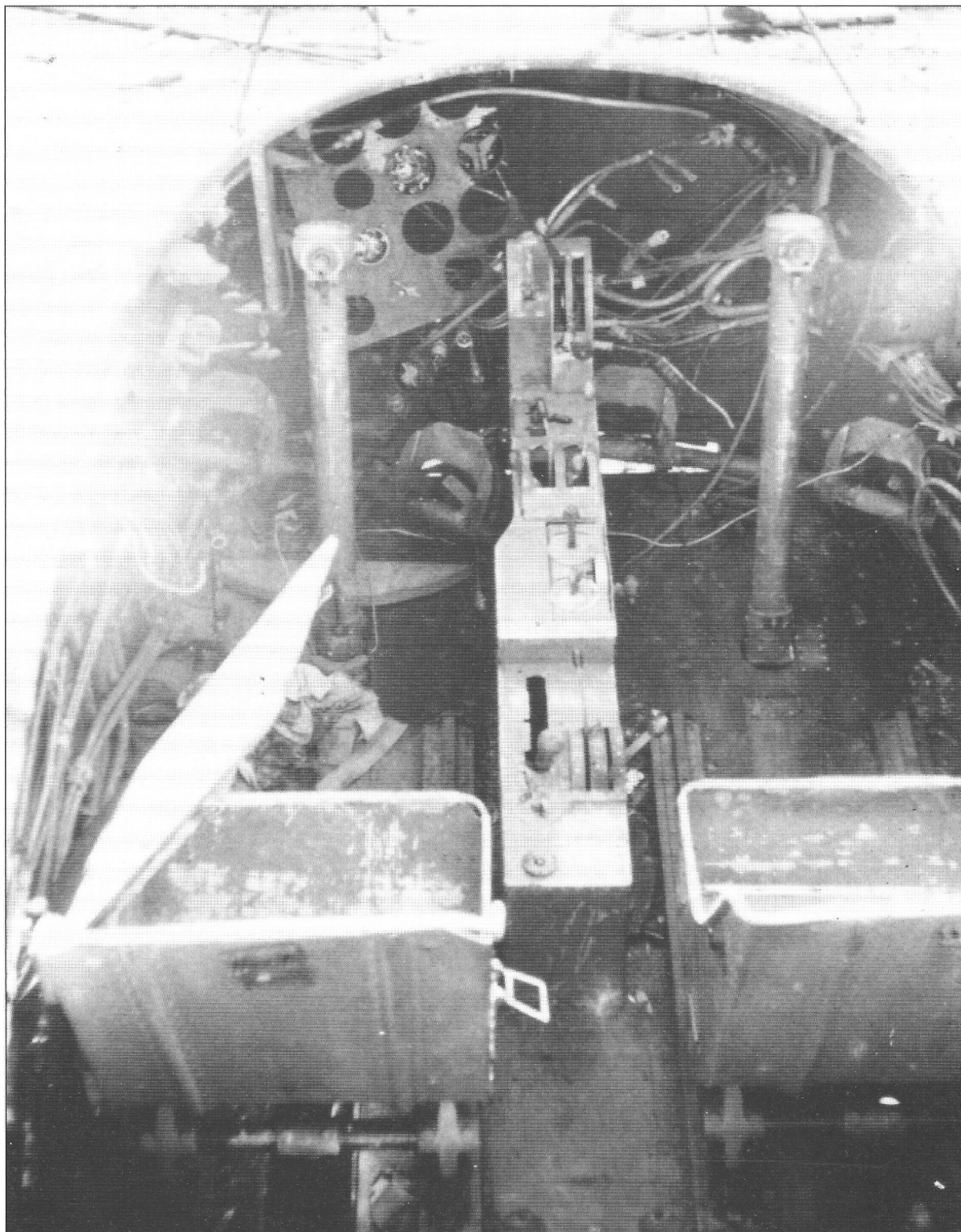
Two patrol Q1W1 Tokai
aircraft prepared to be
shipped to the United
States. Tachikawa
Ki-74 (Patsy) can be
seen in the background.
The four Q1W1 Tokai
aircraft arrived in the
United States. One
of them flew until
1946. Newly registered
FE-4800 (TR-4800)
was scrapped in
Park Ridge in 1950s.
FE-4805 was scrapped
in Middletown. FE4810
and FE-4811(T2-48-11)
were scrapped in
Newark.

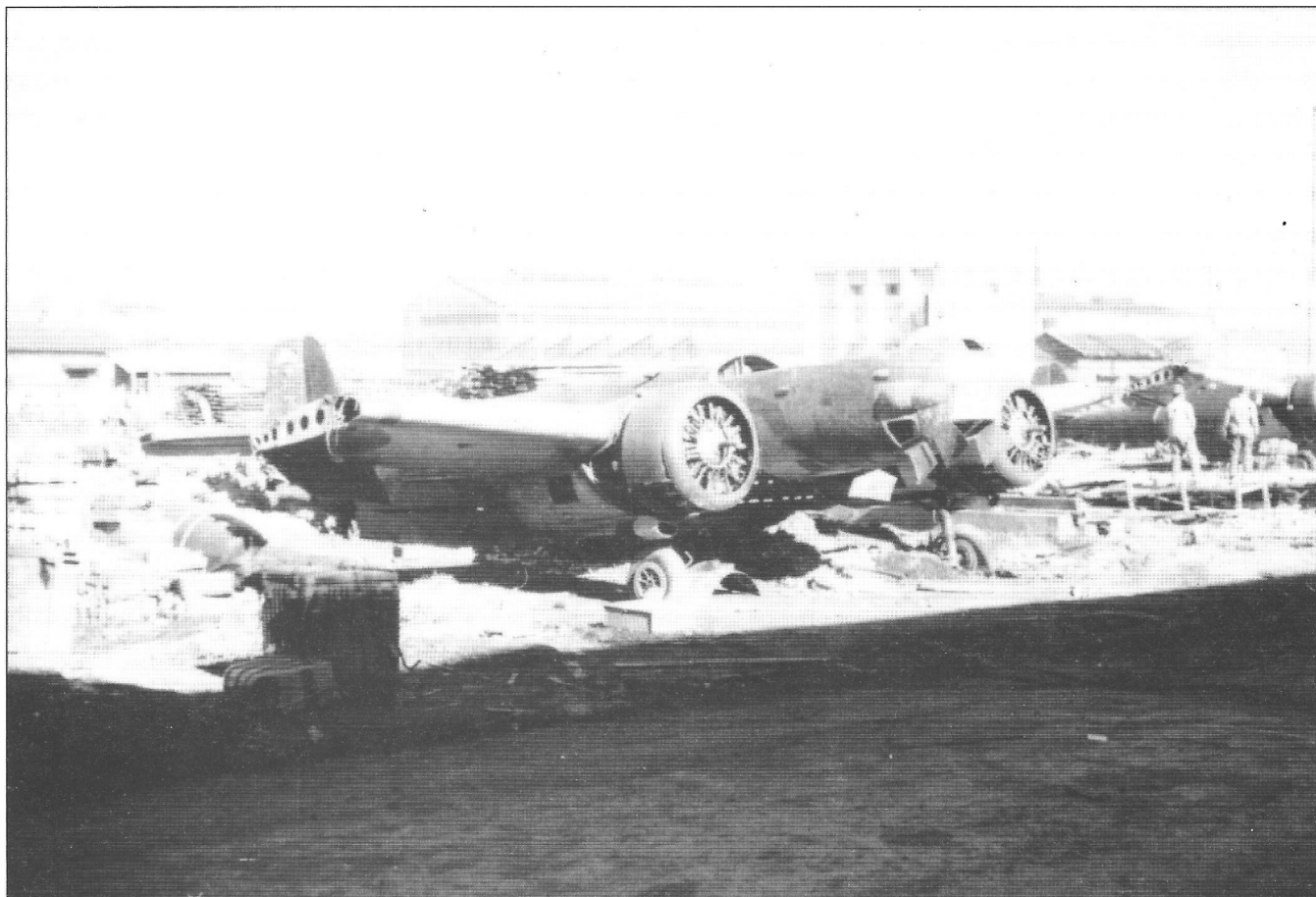


*Destroyed pilots'cockpit
of the Q1W1-K Tokai
Ren trainer shown on
page 123. The bottom
of the covered nose is
broken and the outside
can be seen. Two
control systems can
be seen side by side.
(Hirokazu Sugiyama)*

Technical data:

- **Description:** twin-engine low-wing patrol (Q1W1, Q1W2) or training aircraft (Q1W1-K). All metal structure with fabric covered ailerons and control surfaces (Q1W1), mixed structure (Q1W2) or entirely wooden (Q1W1-K).
- **Crew:** three (Q1W1, Q1W2) or four (Q1W1-K).
- **Power plant:** two 9-cylinder air-cooled radial Hitachi GK2C *Amakaze* 31 engines producing 610 hp (449 kW) at take-off and 480 hp (353 kW) at 1,500 m; three-blade metal propeller with variable pitch and 2.5 m diameter; fuel capacity 1,200 l, two additional fuel tanks 225 l each.
- **Armament:**
 - One flexible Type 92 7.7 mm machine gun (Q1W1).
 - One Type 99 Model 2 20 mm gun (Q1W1 Ko).
- **Bomb load:** two 250 kg depth charges. Usually only one 250 kg depth charge was carried on operations.





Type	Q1W1 Model 11	Q1W1-K	Q1W1 Model 11 Ko	Q1W2 Model 21
Dimensions				
Wing span [m]	16	16	16	16
Length [m]	12.085	12.085	12.085	12.085
Height [m]	4.118	4.118	4.118	4.118
Wing area [m ²]	38.21	38.21	38.21	38.21
Weights				
Empty [kg]	3,108	3,060		3,050
Takeoff [kg]	4,800	4,745		4,800
Maximum take-off [kg]	5,318			
Payload [kg]	1,692	1,685		1,750
Wing loading [kg/m ²]	125.62	124.18		125.62
Power loading [kg/hp]	3.93	3.89		3.93
Performance				
Maximum speed at 1,340 m [km/h]	322	315 ¹		322
Cruising speed at 3,000 m [km/h]	241	240		240
Landing speed [km/h]	132	131		139
Climb to 2,000 m in	8'44"	2'40" ²		
Ceiling [m]	4,490	4,500		4,500
Range [km]	1,340	1,310		1,310
Maximum range [km]	2,415	1,650		

¹ at 1,700 m

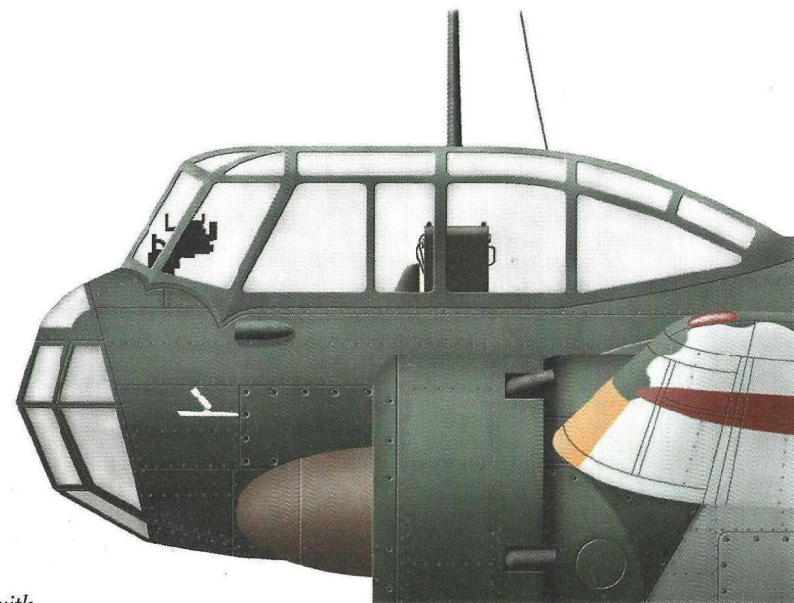
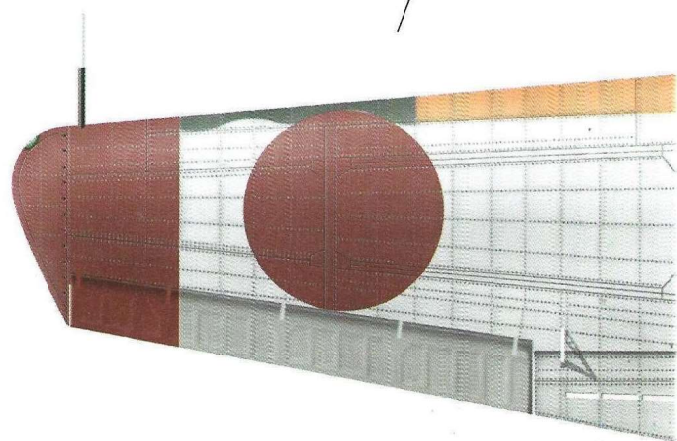
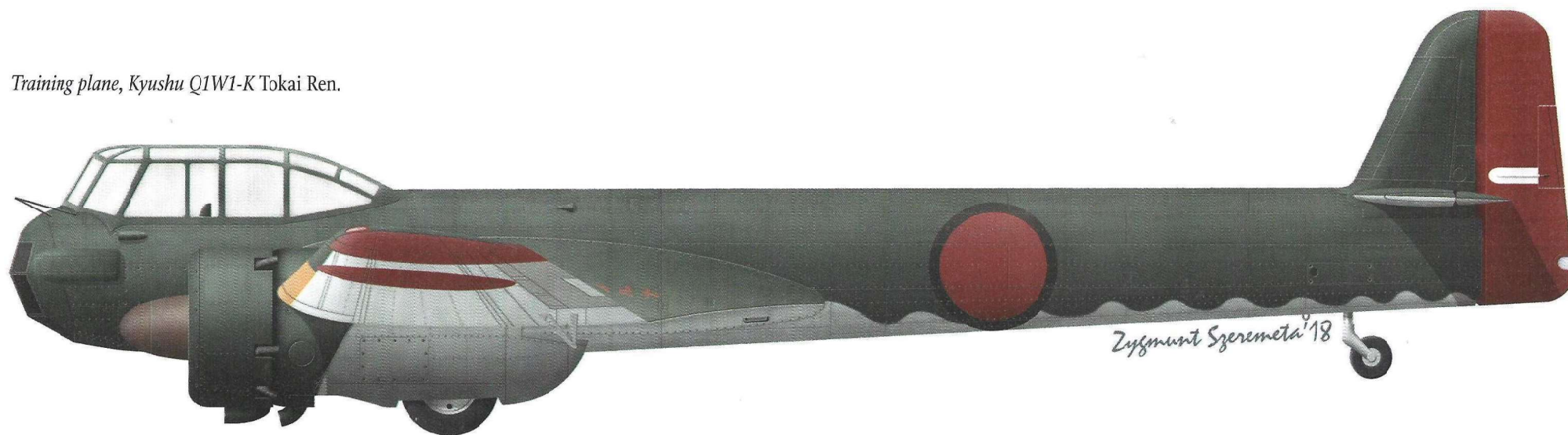
² at 1,000 m

Production

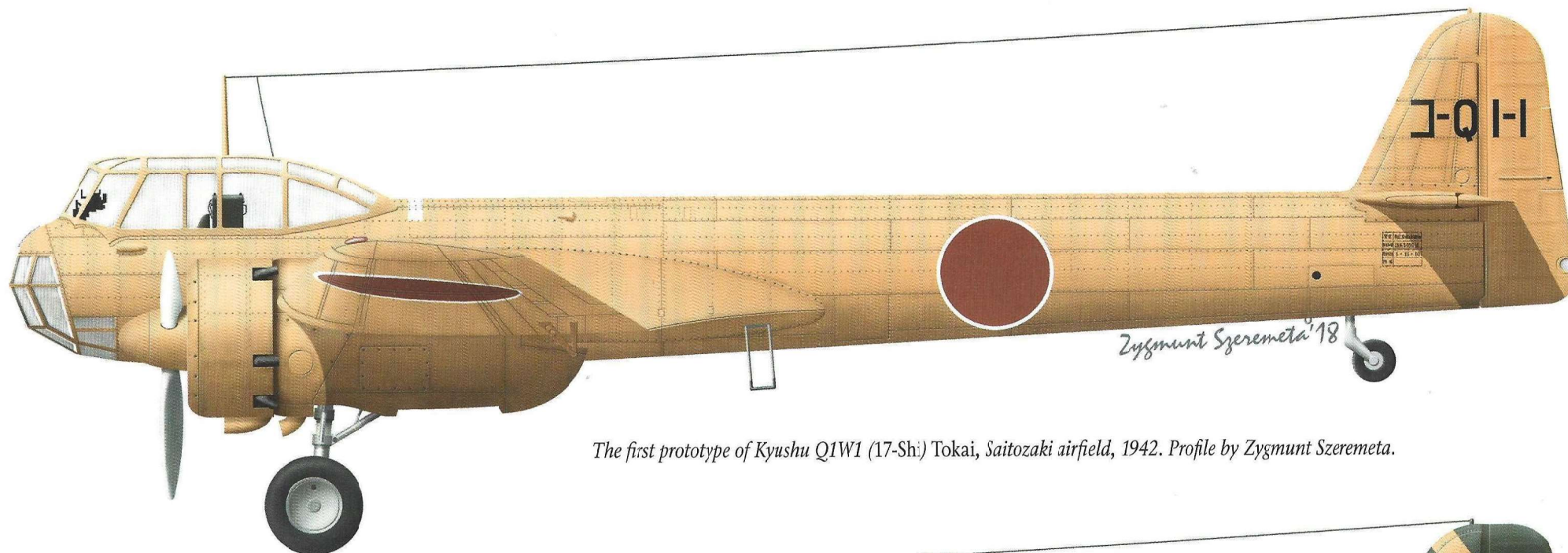
Kyushu Hikoki Kabushiki Kaisha	
Q1W Tokai aircraft, including nine prototypes and pre-production aircraft	153
Total	153

Two wreckages of the Q1W1-K Tokai Ren trainer aircraft. The nose was painted with lighter color like light gray. The rudder was painted red showing trainer aircraft. (Hirokazu Sugiyama).

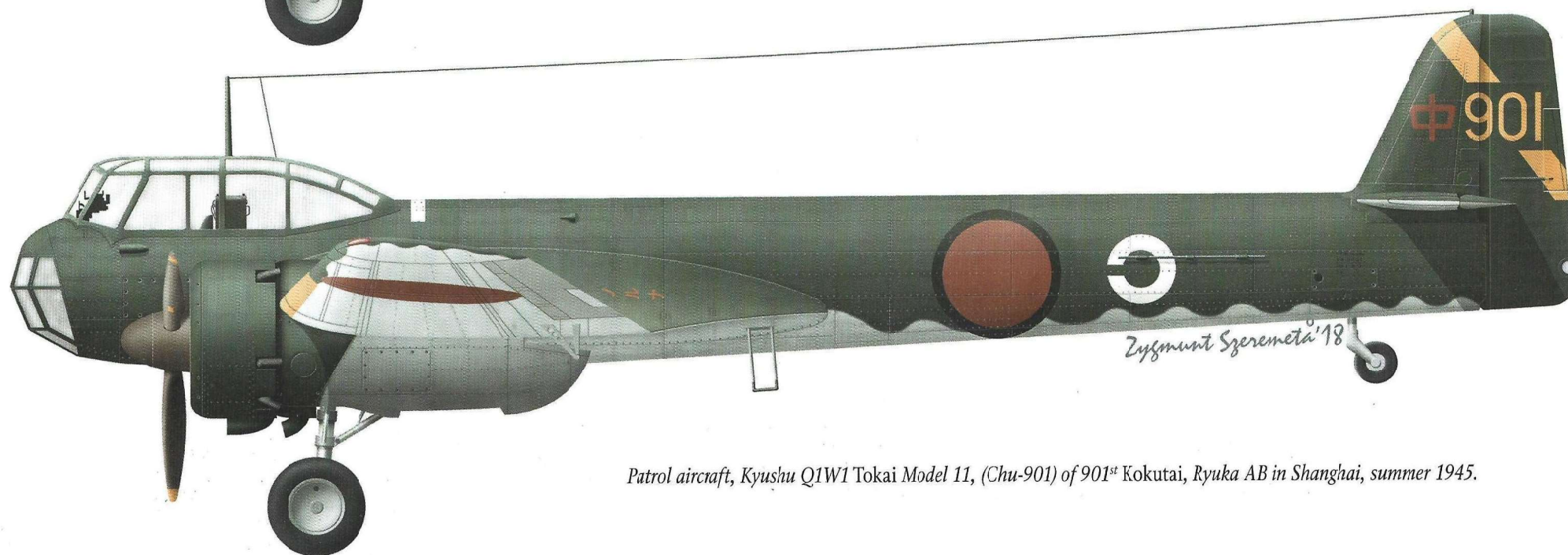
Training plane, Kyushu Q1W1-K Tokai Ren.



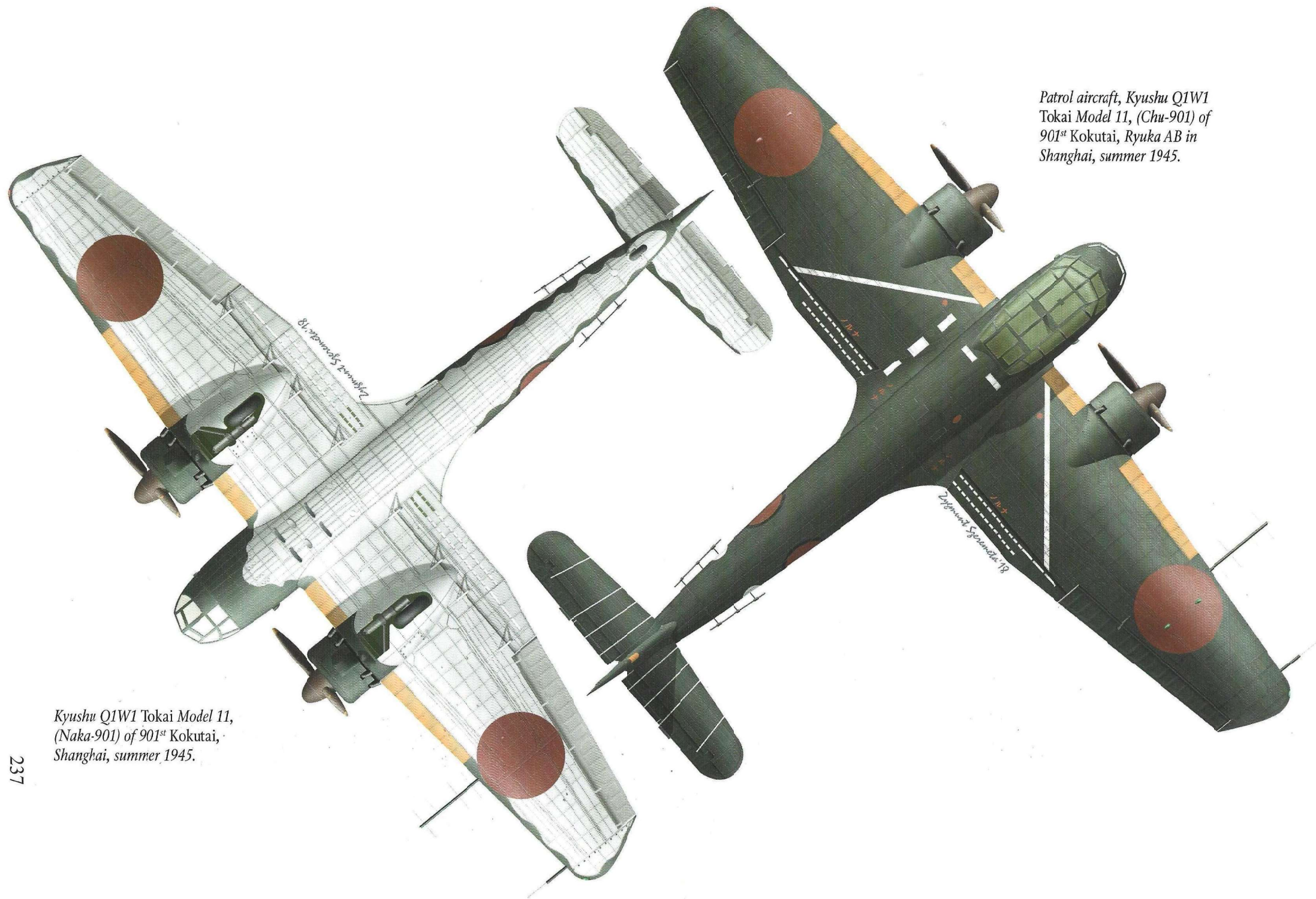
Front fuselage of the Q1W2 Tokai Model of Saishu Tou with symbol of a sunken submarine.



The first prototype of Kyushu Q1W1 (17-Shi) Tokai, Saitozaki airfield, 1942. Profile by Zygmunt Szeremeta.



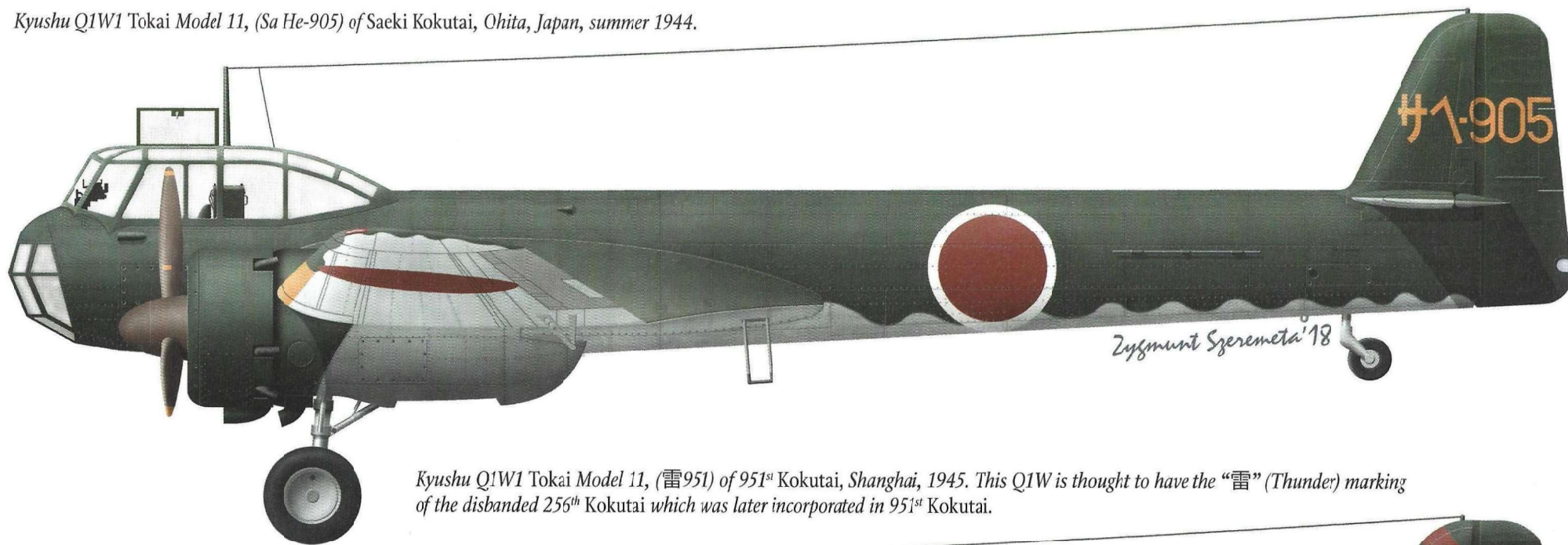
Patrol aircraft, Kyushu Q1W1 Tokai Model 11, (Chu-901) of 901st Kokutai, Ryuka AB in Shanghai, summer 1945.



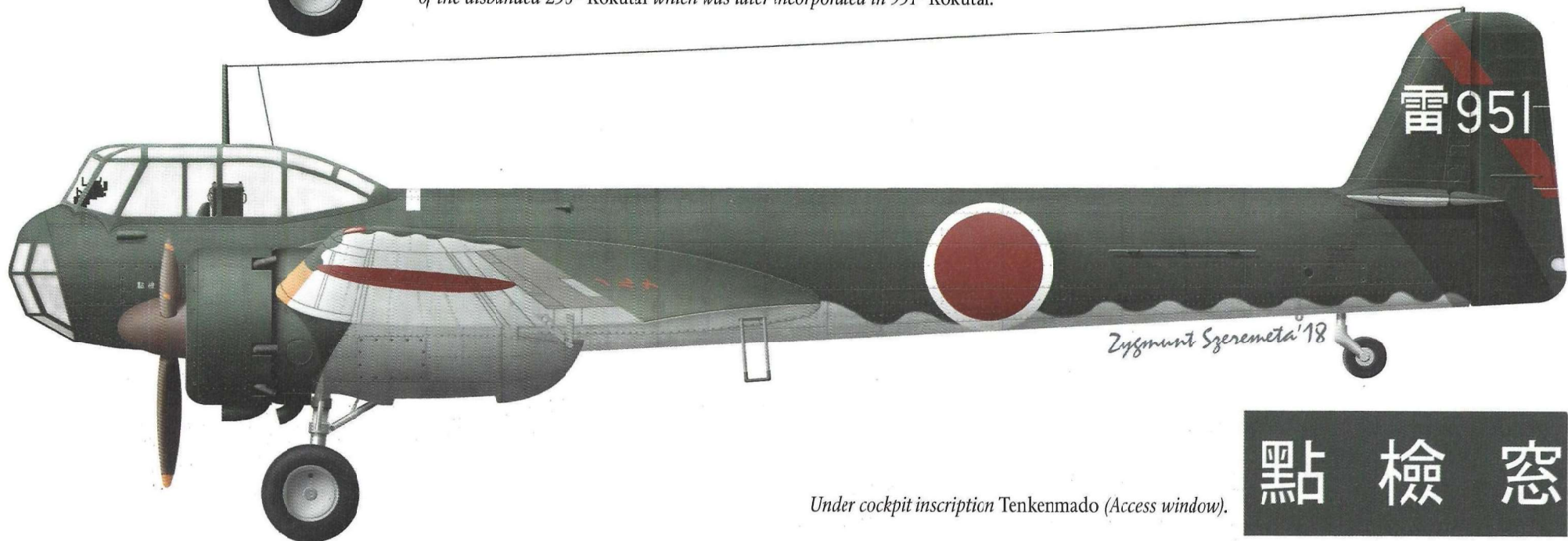
*Patrol aircraft, Kyushu Q1W1
Tokai Model 11, (Chu-901) of
901st Kokutai, Ryuka AB in
Shanghai, summer 1945.*

*Kyushu Q1W1 Tokai Model 11,
(Naka-901) of 901st Kokutai,
Shanghai, summer 1945.*

Kyushu Q1W1 Tokai Model 11, (Sa He-905) of Saeki Kokutai, Ohita, Japan, summer 1944.



Kyushu Q1W1 Tokai Model 11, (雷951) of 951st Kokutai, Shanghai, 1945. This Q1W is thought to have the “雷” (Thunder) marking of the disbanded 256th Kokutai which was later incorporated in 951st Kokutai.



Under cockpit inscription Tenkenmado (Access window).

點 檢 窓

Kyushu Q1W1 Tokai Model 11 in USAAF markings, September 1945.

