

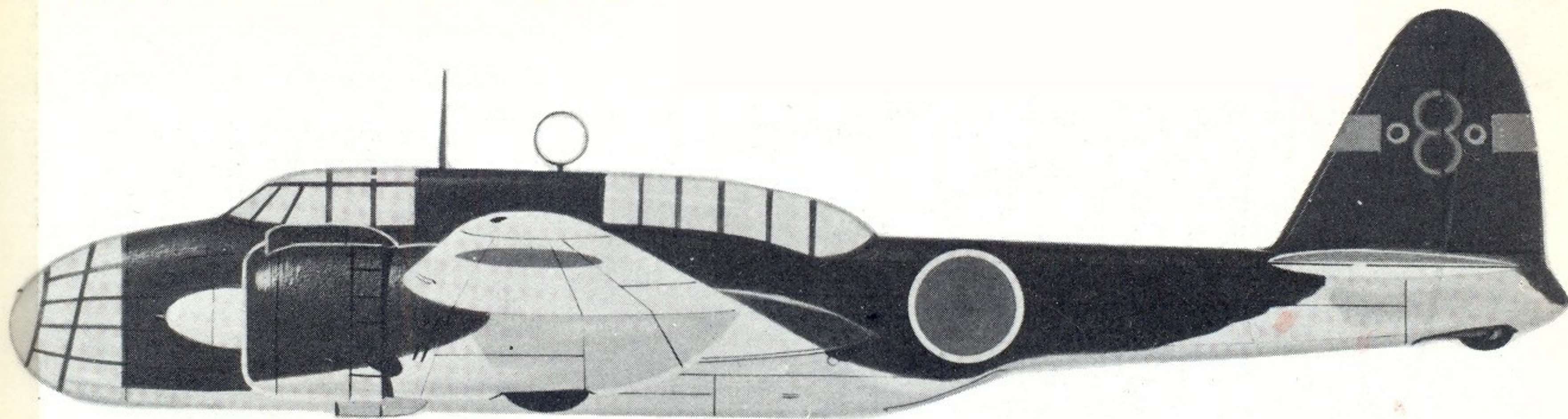
KAWASAKI Ki.48-I/II SOKEI

IN JAPANESE ARMY AIR FORCE-CNAF & IPSF SERVICE





Standard load was six 100-pound bombs carried in internal racks. Alternate load was twenty-four 32-pound bombs. (Tohosya via Bueschel)



Ki.48-IIb, 208th Light Bomber Air Combat Regiment, 2nd Company, New Guinea. April 1944. Drab olive upper surfaces, light grey under surfaces. 2nd Company insignia in red.

AIRCAM AVIATION SERIES

NO 32

KAWASAKI Ki.48-I/II SOKEI IN JAPANESE ARMY AIR FORCE-CNAF & IPSF SERVICE

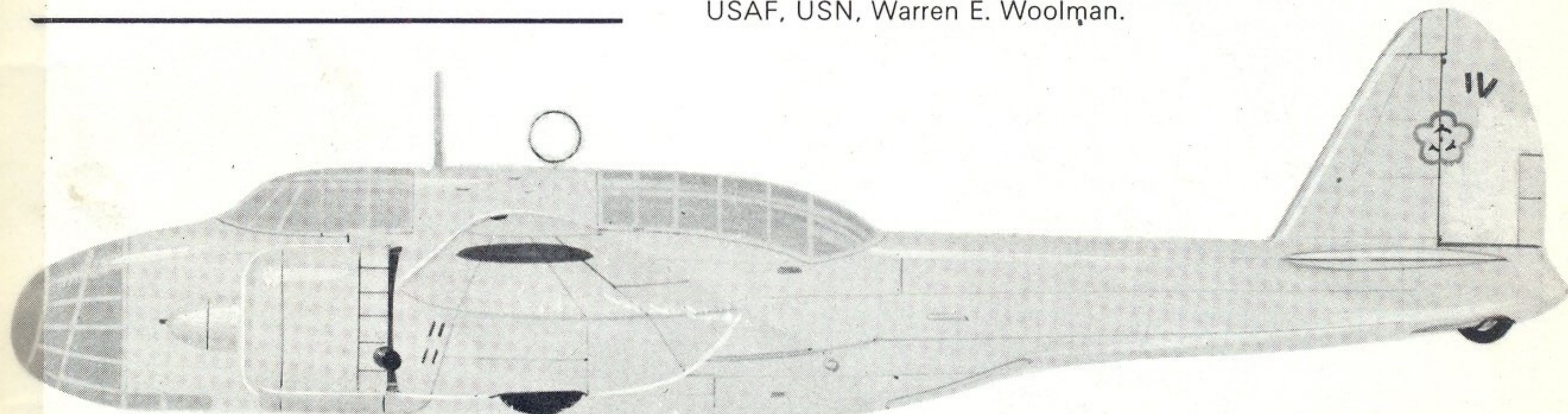
**Compiled and written by
Richard M. Bueschel**

**Illustrated by
Richard Ward**

ACKNOWLEDGEMENTS

The Sokei, first of the Japanese twin-engined bombers in the AIRCAM AVIATION SERIES will be followed at regular intervals by all the Air Force and Naval twins operational by either Service between the late 1930's and 1945. Thanks are due to all those who assisted with material and information whose names are listed below in alphabetical order.

Hideya Ando, Koku Asahi, Asahigraph, Jack Canary, Koku Fan, Rekkoku No Gunyoki, Sekai No Kokuki, Kokutisiki, David C. Lucabaugh, Robert C. Mikesch, Hiko Nippon, Warren D. Ship, Hiko Shonen, Koku Shonen, Shashin Shuho, Umi To Sora, Mannosuke Toda, Sekai No Tsubasa, Tohosya, USAF, USN, Warren E. Woolman.



Ki.48-Ia, Mito Army Flying School, 1940-1943. Overall pale green grey. Black fin marking, School marking in pink and royal blue.

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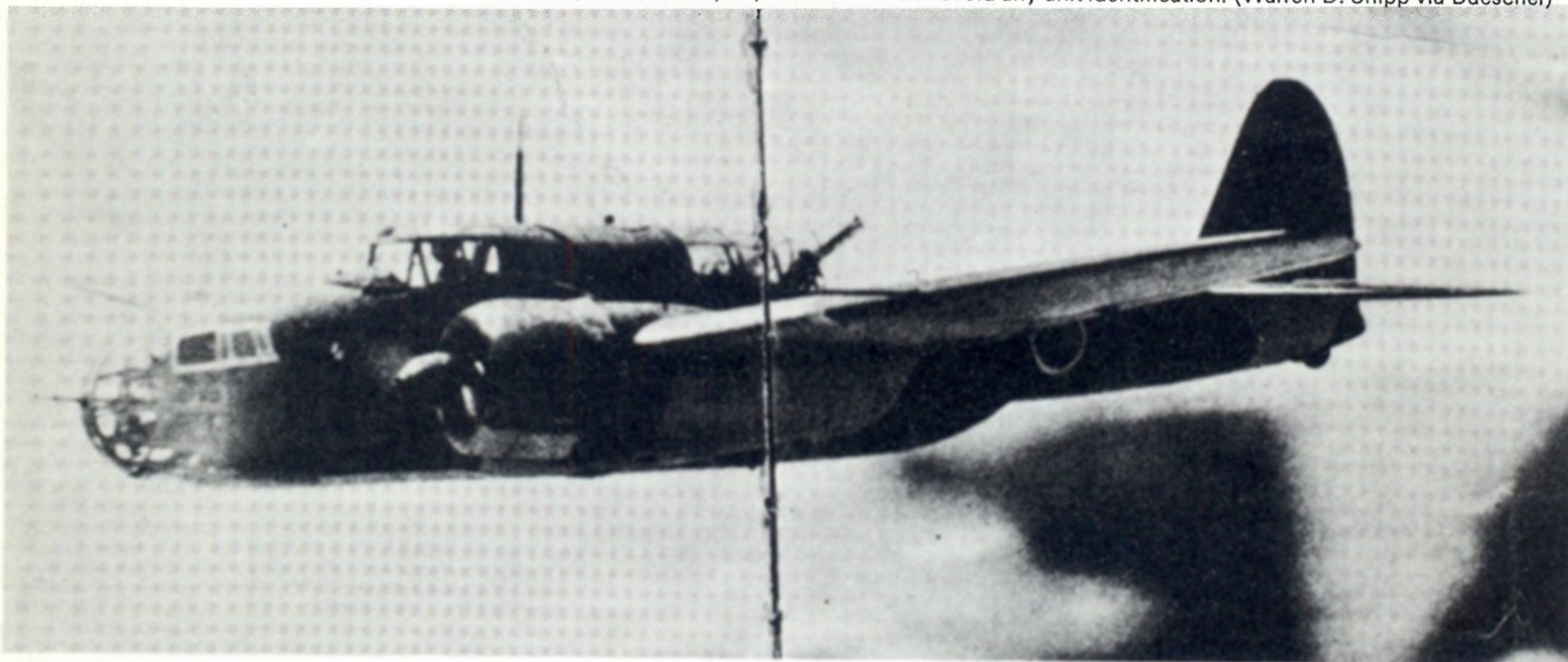
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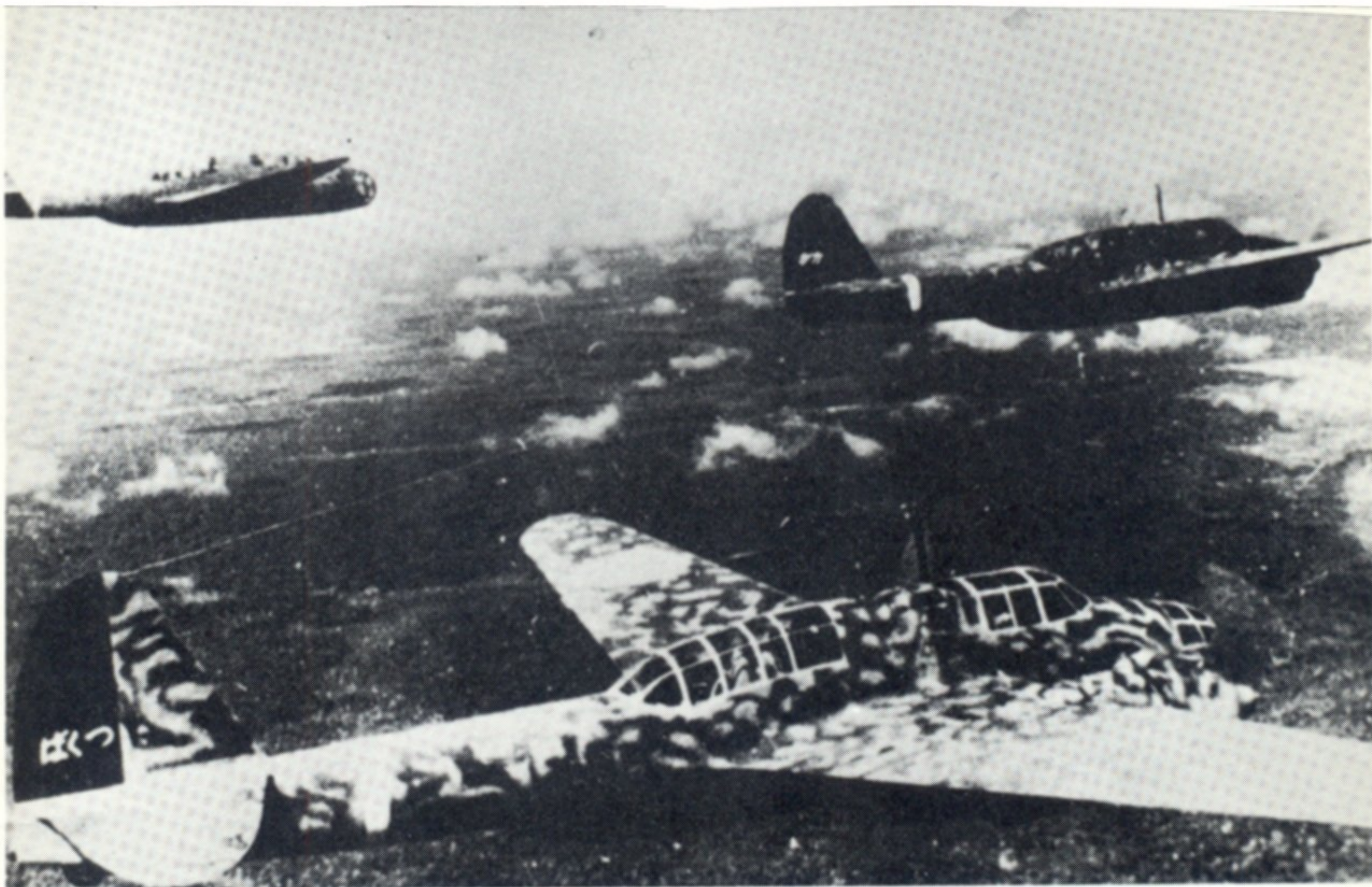
Above: 12th Light Bomber and 65th Light Bomber/Attack regiments, and 82nd Independent Light Bomber company, received 99 Sokei equipment late in 1940. (R. M. Bueschel)

Below: Original released photos of Ki.48-1a were highly retouched by Japanese censors to avoid any unit identification. (Warren D. Shipp via Bueschel)



Below: Ki.48-1b Model 1B entered production in April 1941, replacing the Model 1A in unit deliveries. (Sekai No Tsubasa via Bueschel)





A new war theatre, and new problems! The 75th Attack Air Combat Regiment finds itself over the jungles of New Guinea, November 1943. (Hideya Ando via Bueschel)

KAWASAKI Ki.48 SOKEI

The cruise would make any thoughtful man worry about the progress of Imperial Japan's war in the Pacific, and Commander Tadao Kuwahara, a reserve officer of the Japanese Navy, was concerned. But Kuwahara had other more pleasant things to think about. He was back at sea, once again a ship master in command of the *Nitta-Maru*, one of the luxurious pre-war tour vessels of the N.Y.K. line. Only this time the hull was camouflaged, the envied passenger quarters had been gutted, and the deck was flat. Even the name of the vessel had been changed, for now it was the *Chuyo*, a 17,830 ton converted liner that came out of the Kure Navy Yard in November 1942 as an auxiliary aircraft carrier. Strapped securely to its flight deck was a varied assortment of Japanese army and navy aircraft, including a dozen or more Ki.48 Type 99 two-engine light bombers of the 208th Light Bomber Air Combat Regiment, an aircraft more commonly known by the brief title of 99 Sokei.

The short days of February 1943 began to lengthen as the *Chuyo* ploughed south on this voyage from the Empire to Truk in the Caroline Islands, the Japanese Navy's largest base outside of the homeland, and headquarters for the Imperial Navy's defence of the Central Pacific. There was no escaping the fact that Truk was naval territory, and the aircraft on board were army, and short-ranged. So short-ranged in fact, that it required carriers to bring them south. They obviously would not stay at Truk, and it was well known that the Imperial Navy was responsible for the operations further south in the Solomons and New Guinea. Moving army air south could only mean one thing. Trouble.

The fact that the 208th Regiment had been in Man-

companion unit, the 45th Attack Air Combat Regiment, heading for Rabaul, the navy's advance bastion in New Britain, and keystone in the defence of the Solomon Islands. Truk was over 700 miles due north of Rabaul, making the hop within flight range of the bombers once they were again fit to fly.

The men of the 208th Regiment had thoughts of their own. Sitting out the war in a soft berth as a training unit in Manchoukuo, troubled more by the dust and cold of their bases than the great Pacific war that was unfolding on fronts so far away, they were at last going to be part of the battle. Because of a decision made at Imperial Headquarters in Tokyo, the unit suddenly found itself in Japan at the start of 1943 to be re-equipped with the newest Ki.48-IIb model of the 99 Sokei, and by the end of February advance elements were at Truk to assume their new role with the 4th Air Army assigned to Ambon and Rabaul. Within ten days of their landing, the companion 45th Regiment had all its aircraft in shape and headed south early in March. The 208th wasn't as lucky. Equipped with a new version of their familiar light bomber, and a lack of maintenance skill on the part of newly-assigned personnel, the work progressed slowly. It wasn't until the end of April that the unit was in any shape to make the last leg of their Pacific odyssey by air, and even then they had to leave ten of their reluctant aircraft behind them. The light bomber that had been designed in the late 1930's to solve a local tactical problem on the Chinese mainland was staggering its way to a conflict being played on an international stage. It was destined to thereafter remain in a supporting role, for its chance at the lead had passed once the armed might of

The foe is the Soviet Union

Once Japan had presented the world with the *fait accompli* of the occupation of China's three northern provinces in 1931, with the ultimate establishment of the Empire of Manchoukuo, Imperial Japan and the Soviet Union angrily faced each other across hundreds of miles of undefined borders. To the Japanese Army, the major threat to Japan was the communization of Asia, and the specific enemy was the Soviet Union. With the start of the Sino-Japanese "Incident" in July 1937, the Japanese Army Air Force (JAAF) found itself faced with a different enemy, and one it felt well equipped to handle. The army had long relied on its tactical light bombers to support its ground forces and attack enemy positions, and the type was well represented in the JAAF by substantial numbers of single-engined Kawasaki 88 Kei and Ki.3 93 Tankei light bomber biplanes. Newer monoplane types were just coming into service, with Mitsubishi entering the field with its Ki.30 97 Kei, to be quickly followed by Kawasaki's more manoeuvrable Ki.32 98 Kei.

While most of the world decried the Japanese invasion of China, the Soviet Union supported Chiang Kai-Shek's nationalist Chinese government with more than just words. Soviet aircraft soon appeared over China, with the fast Tupovlev SB-2 light bomber coming as a great shock to the JAAF. Almost as fast as the new Ki.27 97 Sen Japanese fighters just coming into service (See AIRCAM No. 20), the SB-2 completely outclassed the light bombers being produced for the JAAF. Facing potential war with the Soviet Union, Japanese Army Air quickly reacted to the challenge. Before the year was out both Mitsubishi and Kawasaki, as producers of the current light bombers, were given the hot project of immediately developing matching twin-engined light bombers. Mitsubishi, virtually a newcomer in a field long the franchise of the Kawasaki firm, assigned Tomio Kubo to begin work on the Ki.47 army experimental two-engine light bomber project, utilizing work already started on the twin-engined Ki.46 reconnaissance project. At Kawasaki, Takeo Doi was thrown into the breach in January 1938 to convert the basic Ki.45 air frame design into the Ki.48 army experimental two-engine light bomber. It was an impossible load for both firms, each already up to its neck in work on the first generation of modern monoplane types for the JAAF. Mitsubishi had the added complication of having an even greater design programme in work for the Japanese Navy, and subsequently dropped out of the competition before design work on the Ki.47 was completed. At Kawasaki, design complications with the Ki.45 project further held up the Ki.48, which by now had a lower priority once Mitsubishi had dropped out of the running. It wasn't until July 1939 that Army Air Project 545 was finally completed in prototype form as the Kawasaki Ki.4801, the first of four similar experimental models. Powered by two of the new 14-cylinder Nakajima Ha.25 radials of 990 h.p. each, the four prototypes were delivered to the Army Flight Test Department at Tachikawa Army Air Field, near Tokyo.

To meet the specifications laid down by the army, the forward fuselage was a bulbous structure that carried a crew of four with nose, dorsal and retractable ventral gun positions as well as an internal bomb bay. The need to conserve weight while providing proper balance led to a long boom-like rear fuselage to support the tail assembly. Structural tests indicated that the configuration was strong enough to carry the load of the aircraft. But under power it was a different story. First flying in September 1939, prototype Ki.4801 exhibited a dangerous tail flutter, although in all other respects the aircraft handled well. Between September and November the four prototypes were continually modified to reinforce the rear fuselage, with a wide variety of cut-and-try tail configurations being tried to eliminate the vibration problem. Acceptance of the basic air frame led to construction of five additional prototypes to be used as pre-production models to set up the assembly lines. In its final production configuration the rear fuselage had been strengthened and the horizontal tail assembly raised by 13.75 inches over the original prototype, an adjustment that was then carried back to the original parent Ki.45 design.

At the end of November production was authorized as the Ki.48 Type 99 two-engine light bomber with JAAF acceptance of the type as an official weapon on 11 May 1940. It had taken the bomber two and a half years to reach production, and it would be another two years before its Ki.45 mentor would reach the same stage.

The foe is China

Much had happened in the world since the Ki.48 project was originated. The mobile land fighting of the Chinese "Incident" had turned into a stalemate; in September 1939 Germany had invaded Poland and war came to Europe; Japan and Germany had become friendly and joined together on 27 September 1940 to sign the tripartite pact; and Japan had adopted a reconciliatory attitude toward the Soviet Union, to lead to the signing in April 1941 of a neutrality pact between the former enemies. Although it was an uneasy truce, Japanese Foreign Minister Yosuke Matsuoka saw himself as a diplomatic genius that had removed the threat of war from Japan, while solving the Chinese "Incident" by eliminating China's allies. That Japan's international agreements had placed the nation on a collision course with the United Kingdom, and at least emotionally with the United States and the Netherlands, was of little consequence. The important thing was that the eyes of the world had shifted to Europe, and Japan now had an open hand in Asia free from foreign interference.

As soon as the first production Ki.48-Ia Model IA light bombers began to come off of the assembly lines at Kawasaki's Gifu works in July and August of 1940, the Army Light Bomber Flying School at Hokota was re-scheduled to begin training with the new twin-engined type. By the fall of the year the 45th Attack Air Combat Regiment, which had been flying the Ki.32 98 Kei, was re-equipped with the new Ki.48-Ia 99 Sokei and was



The first four Ki.48 Army Experimental Two-Engine Light Bomber prototypes of summer 1939 suffered extreme tail flutter, causing testing problems. (Sekai No Kokuki via Bueschel)

shipped back to northern China. With a normal range of 1,230 miles and a top speed of just below 300 m.p.h., the 99 Sokei brought new mobility to the JAAF in China. The 99 Sokei light bombers were soon ranging far and wide over the broad Chinese fronts, as well as taking part in anti-guerilla activities. Combat experience led to equipment changes and improved gun mounts, with production proceeding without a break on the Ki.48-Ib Model 1B. In rapid succession the 65th Light Bomber Air Combat Regiment converted from the Ki.32 98 Kei; the 82nd Independent Light Bomber Company and its command unit, the 21st Independent Light Bomber Headquarters Flight, added the 99 Sokei to its Ki.30 97 Kei bombers; in 1941 the 75th Attack Air Combat Regiment replaced its Ki.32 98 Kei aircraft. All of the units were re-trained and sent to the Chinese mainland.

As deliveries progressed into 1941, additional 99 Sokei training was added to the Mito Flying School with a growing ground school training programme at the Army Aviation Maintenance School at Tokorozawa. Other units received the Model 1A and Model 1B, with the 208th Light Bomber Air Combat Regiment newly formed at Kairo in Manchoukuo in March; the 206th Regiment re-equipped in Japan in June; the 16th Regiment replacing its Ki.30 97 Kei aircraft in Chosen; and the 8th Regiment converting from a reconnaissance unit in August, moving south to Formosa for future assignment. In October, the 99 Sokei first appeared on colonial soil when the 90th Regiment, formerly flying the Ki.30 97 Kei, was moved to airfields in northern French Indo-China. By 1 December 1941 the 99 Sokei was serving in every military zone occupied by the Japanese Army, and 350 of the bombers had been produced.

The foe is A-B-D

It is a truism of military planning that the forces that are to do the fighting rarely know where they are going or what they are expected to do until they are in the thick of things. As the Japanese Press took a more intransigent position in regard to the real and implied threats of the Allied Powers of America and the British Commonwealth, with parallel horror stories of Dutch treatment of the native population in the Netherlands East Indies, the lowliest military man in the Japanese Army knew that something was brewing. The tension was electric as the A-B-D powers, the common Japanese military euphemism for American-British-Dutch, appeared to add insult to injury. The sense of impending action was heightened by special training and unit relocation. The 75th Regiment was moved to southern China to join the 90th Regiment in French Indo-China, both scheduled to take part in the Malayan invasion operations under command of the 3rd Air Army. To the northwest, poised for the signal of war, the 8th and 16th Regiments unknowingly prepared for the invasion of the Philippines as part of the 5th Air Army in southern Formosa. Both air armies would throw their 99 Sokei units into combat the first week of war.

At the joint army-navy conference at Iwakuni, ending

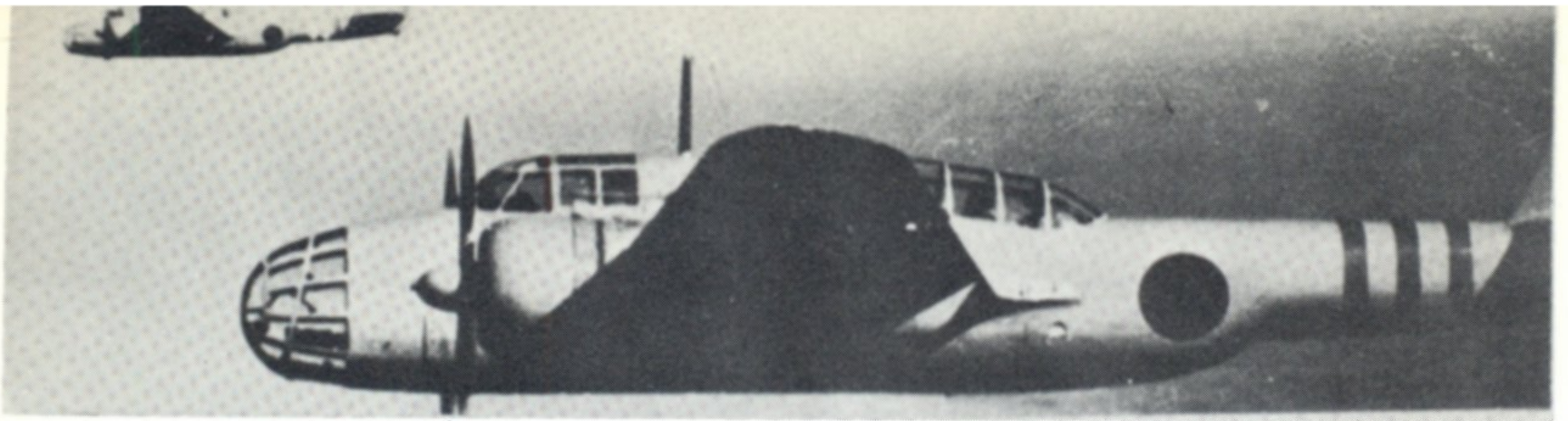
on 16 November 1941, the final plans for the opening of hostilities were drawn up. The Philippines Attack Force of the 5th Air Army would be responsible for the northern Philippines as far south as the 16th latitude, while the much more powerful Malaya attack force of the 3rd Air Army would be responsible for all of the Malay peninsula, reaching as far south as the British stronghold at Singapore. Both attacks were to take place at dawn on 8 December, Japanese time, to coincide with the Imperial Navy's 7 December assault on Pearl Harbour, half-way across the Pacific in the American time zone. While the Philippines campaign was expected to be troublesome based on overrated estimates of American and Filipino air power, the invasion of Malaya was rated as a much more difficult operation due to the distances involved and the higher degree of preparedness expected from the defending British and Commonwealth forces.

The invasion of the Philippines began on the foggy dawn of 8 December when an unopposed Japanese Army force landed at lonely Bataan Island, half-way between Formosa and Luzon, and took over the airstrip. By 10 December Japanese troops had landed on Luzon, taking over the airfields at Aparri and Vigan. Once command of the airfield had been stabilized, the first 99 Sokei light bombers of the 16th Regiment began to land at Aparri on 14 December, only two days after the 50th Regiment had arrived with its 97 Sen fighters. With light bombers now based on northern Luzon providing air support for the invading Japanese ground forces, the invasion moved swiftly. In less than a week the Japanese had all but destroyed American air power in the Philippines, and the 99 Sokei bombers of the 8th and 16th Regiments were operating in safe skies, concentrating their attention on their fleeing targets. Moving their bases inland as the front pressed forward, the units were finally within close range of Manila by the last week of December 1941. Unexpectedly, the defending American and Filipino forces began to concentrate themselves on the Bataan peninsula, with General MacArthur establishing his headquarters on the fortified island of Corregidor. By 29 December the light bombers were ranging freely over narrow Bataan, striking at roads and bridges to halt the retreat, while heavy Mitsubishi Ki.21 97 Ju bombers struck at the rocky island. The campaign appeared to be all but over with the 8th Regiment re-assigned to the assault on Rangoon. But it wasn't. It was almost five more months before the 16th Regiment was able to relax following the final surrender of Allied forces in the Philippines.

In Malaya, the sad story repeated itself. Landing in southern Thailand and at Kota Bharu in northern Malaya, on 8 December, in a matter of days 99 Sokei light bombers were operating on foreign soil. By January 1942 Singapore was under constant aerial attack, and the Japanese could turn their attention north to the tempting prizes of Rangoon and Burma. The assault on Rangoon started on 23 December, with army Ki.30 97 Kei, Ki.21 97 Ju and Ki.48 99 Sokei bombers appearing over the dock areas and the city in a brutal profusion of raids originating from bases less than 200 miles away in

The next five prototypes, the first completed in September 1939, had a strengthened fuselage and redesigned tail section. The type was accepted for production in December 1939 in this form. (Sekai No Kokuki via Bueschel)





Deliveries of the Type 99 Two-Engine Light Bomber, Model 1A, began in July 1940 with assignment to the Hokota Army Light Bomber Flying School for unit training. (William Green via Bueschel)

Thailand. Suffering heavy losses in the raids, and meeting fierce opposition for the first time, the 99 Sokei bombers of the 75th and 90th Regiments, soon joined by the 8th Regiment, proved to be almost defenceless without fighter cover. They were slow, lacked fuel tank protection or crew armour, and carried a minimal bomb load. Sheer force of numbers, and waning British and American air strength, carried the day for the Japanese. By the end of February Rangoon was lost, and in a matter of weeks Japanese forces fanned into Burma.

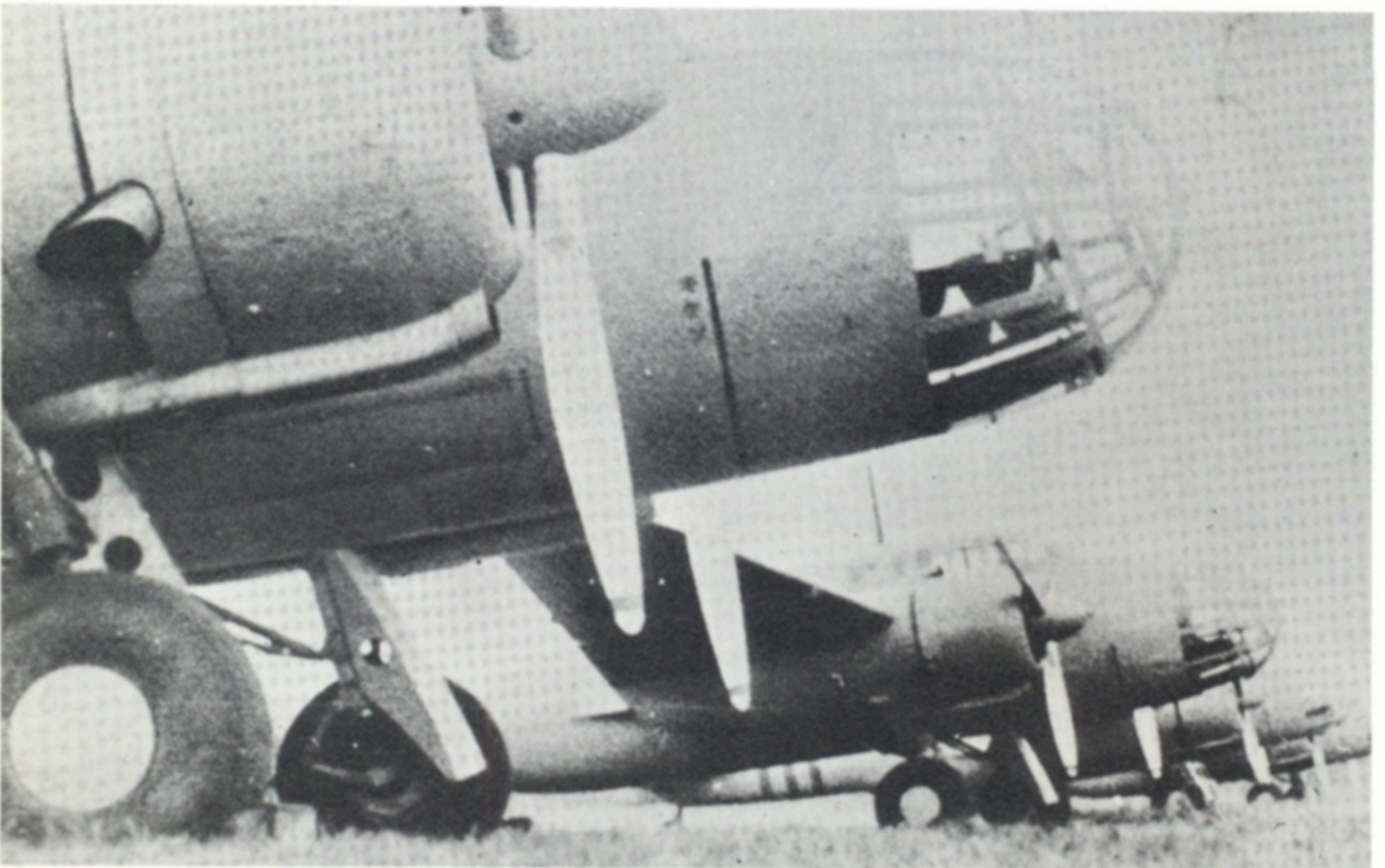
The foe is time

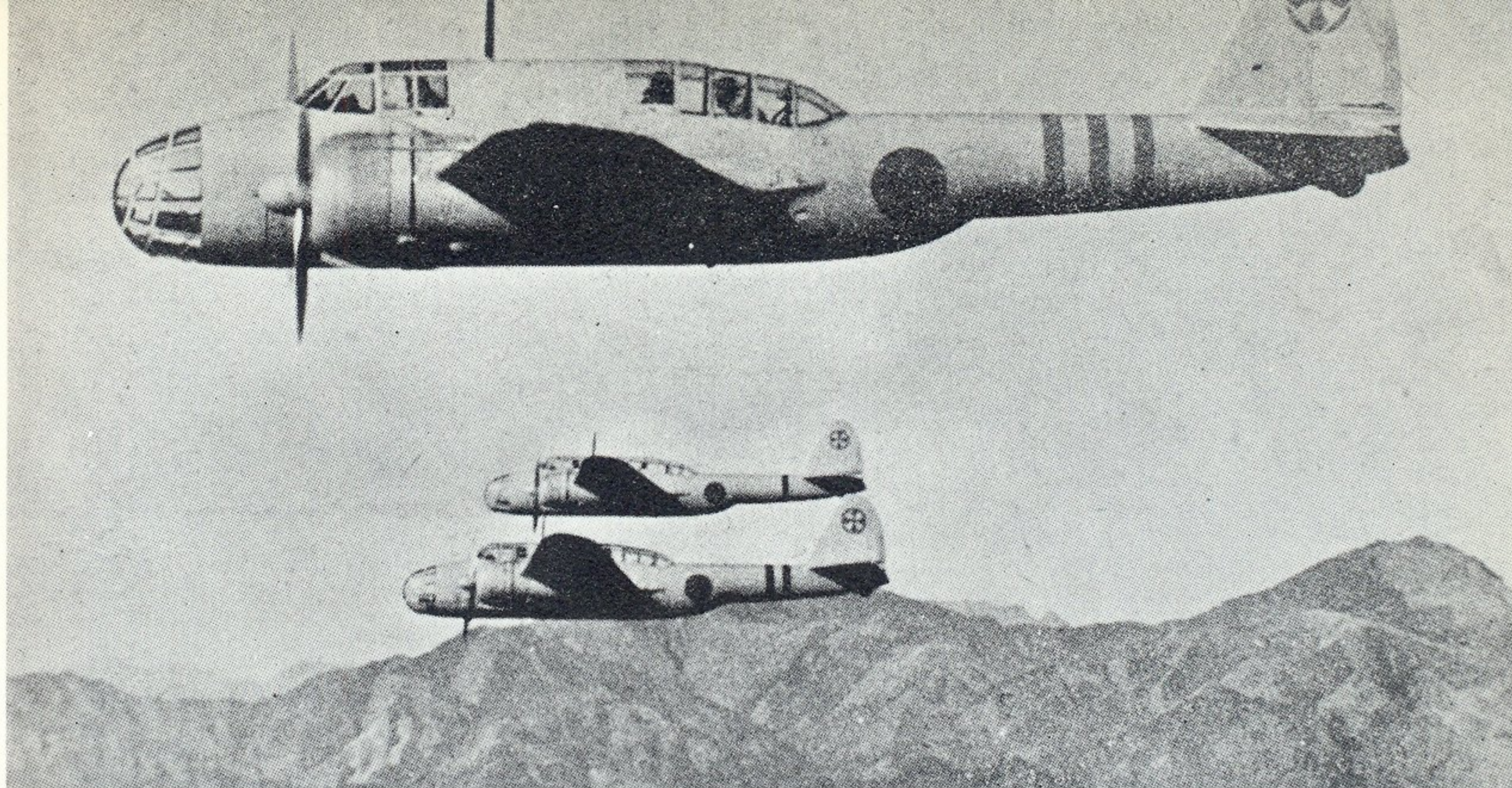
Far to the north, and away from the opening battles of the southern operations of the Pacific war, 99 Sokei units remained on station in the Kuriles and in Manchoukuo to counter any unexpected threats to Japan's defence perimeter. Stationed at Karafuto in the dead of winter, Ki.48-Ib light bombers of the 3rd Attack Regiment were fitted with cold-weather Watter engine

cowlings to reduce the cooling area. Some of the 99 Sokei's of the 45th Attack and 208th Light Bomber Regiment in Manchoukuo were also equipped in the same manner for a hard winter, and to help control the biting dust of the dry Manchoukuoan airfields. Much of their time was spent in eternal training programmes to keep in trim.

The combat lessons of Malaya and Burma stimulated the development of the advanced Ki.48-II Model 2 version of the 99 Sokei, initiated in February 1941 with completion of the first of three prototypes in February 1942. Boosting its power with the use of 1,130 h.p. Nakajima Ha.115 14-cylinder radials, the newer model had a stronger and slightly larger fuselage that accommodated a greater bomb load. A modest amount of armour plate was added to protect the pilot and bombardier, and shield the ammunition boxes adjacent to the dorsal and ventral gunner positions. With the completion of the 557th Model 1 99 Sokei in June 1942, production proceeded on the Ki.48-IIa Type 99 two-engine light bomber, Model 2A,

Line-up at Hokota in late summer 1940. (Rekkoku No Gunyoki via Bueschel)





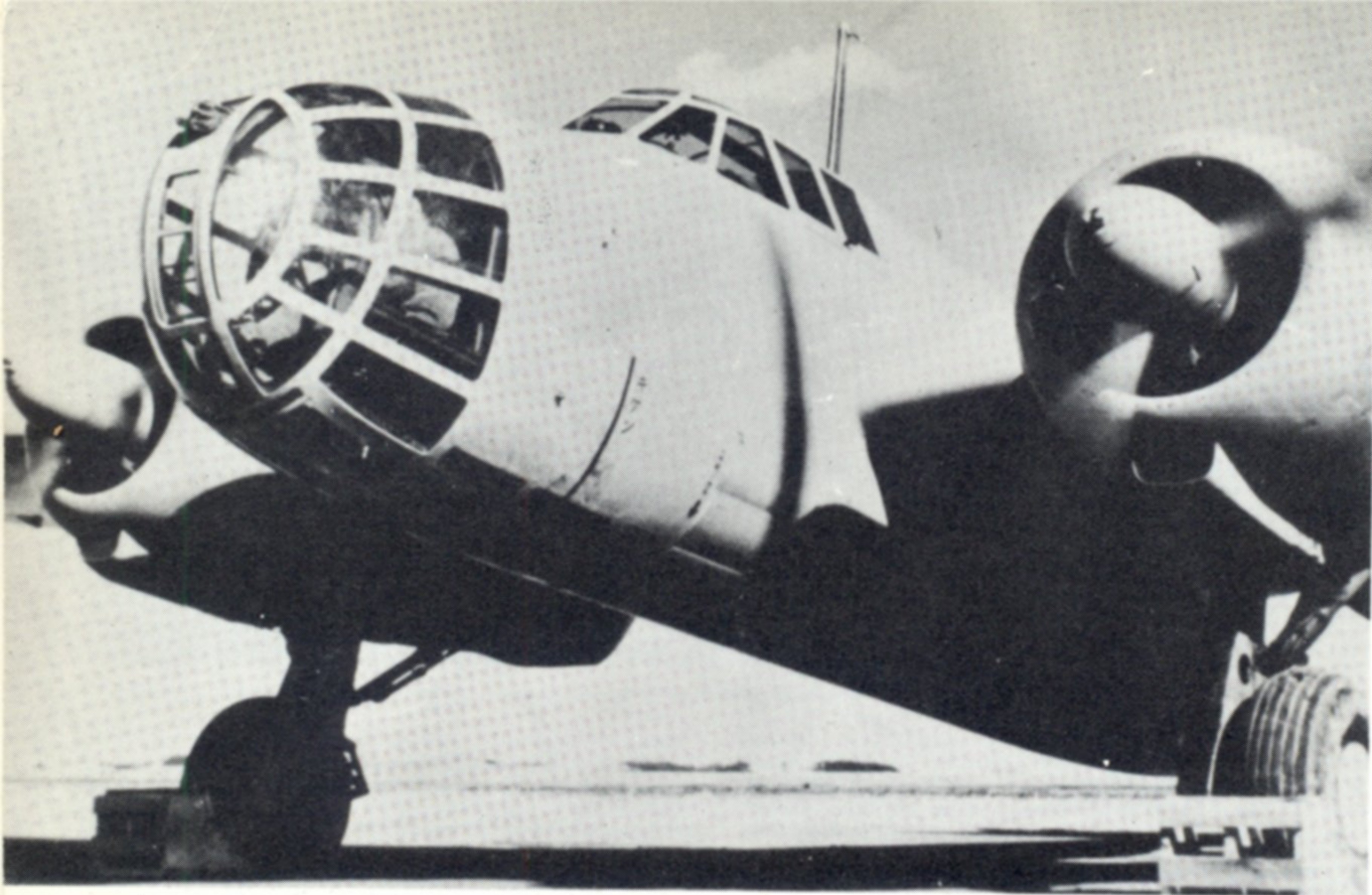
Hokota marking was red variation of Kanji character for Hokota. Fuselage stripes denote positions within company squads. (R. M. Bueschel)

first built in limited numbers beginning in April. The new model was being fed into the existing light bomber units by the end of the summer, while additional units began to receive the 99 Sokei for the first time. Formed at Phnom Penh in French Indo-China in the fall of 1942, the 34th and 35th Light Bomber Regiments were added to the Burma campaign, while the 6th Attack Regiment was re-equipped in China. By now the 99 Sokei had been repeatedly spotted by Allied air crews, and with the adoption of the Pacific code name system of Japanese aircraft identification in the summer of 1942 the type received the name "Julia" based on its appearances in China. Elsewhere, across Burma, Sumatra and Java, the name "Lily" was applied. By December 1942, when the code names were officially adopted in Washington, the duplication had been eliminated and the name "Lily" was retained.

While the army had been carrying the brunt of the fighting on the land mass of Asia, the Imperial Japanese Navy had moved into the far reaches of the southwest Pacific, until by the summer of 1942 the northern territories of Australia were under consistent attack. At a time when plans were being formulated for a Japanese advance to the islands of Samoa following the navy's disastrous defeat at Midway, United States Marines landed at the small tropical island of Guadalcanal in the Solomons on 7 August 1942. Coming under constant attack from Japanese naval aircraft based at Rabaul, the initiative slowly but surely shifted from the entrenched Japanese to the Allied invaders. The strength of the Imperial Japanese Naval Air Force (JNAF) was being drained. Rather than suffer the losses alone the Imperial Navy, complaining bitterly that the JAAF was doing little to support the war effort, petitioned for help. The decision was reached to provide JAAF assistance in the southwest Pacific, and a mass exodus of army air units to the outer reaches of the Empire was begun. The initial plan was to provide a build-up of army fighter, bomber and reconnaissance units at Rabaul to assist in the defence of the Solomons. By January 1943, at the rate of about 50 air-

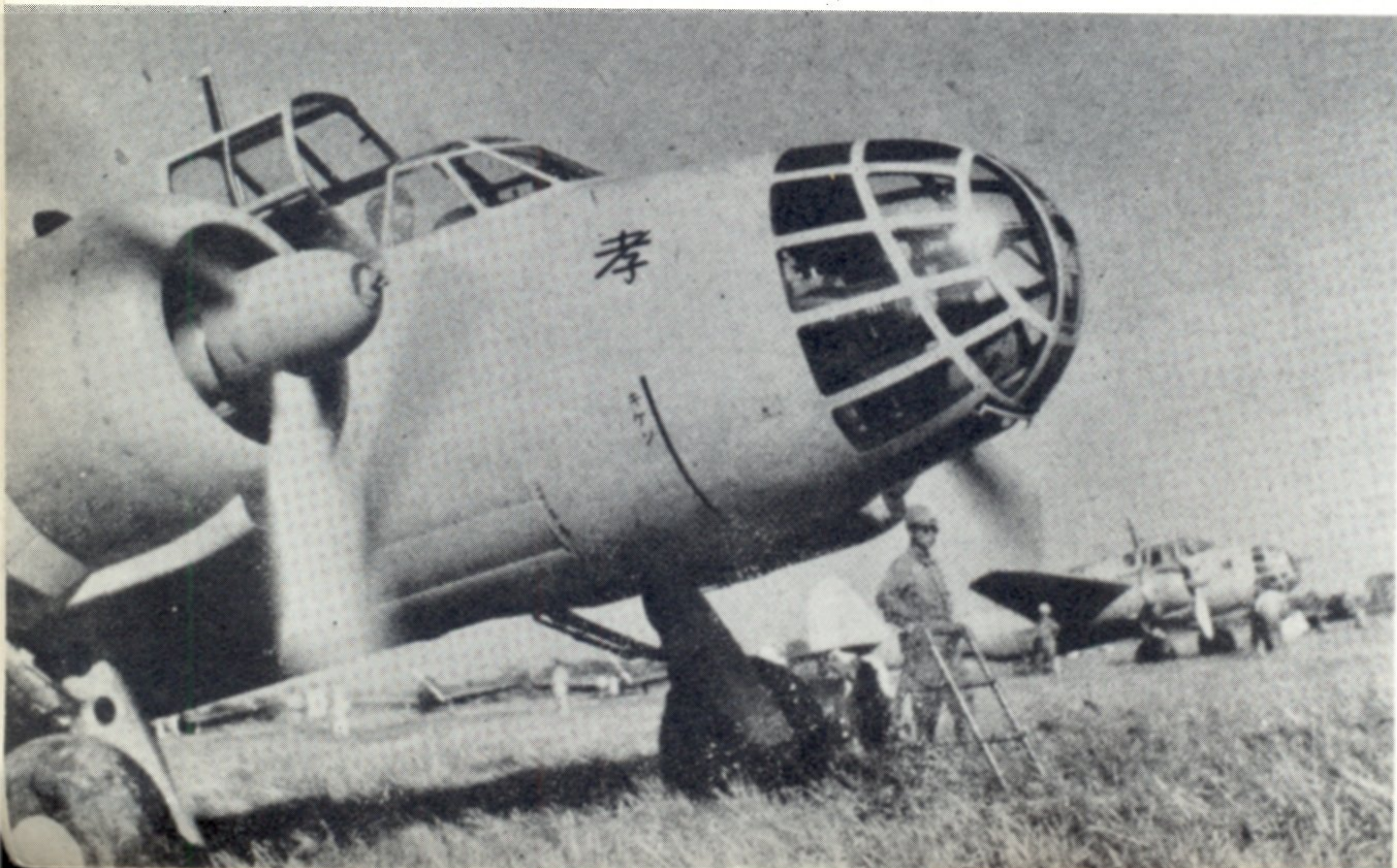
craft per month, the JAAF units began to move across the central Pacific. The fighters and 99 Sokei light bombers were ferried to Truk on the auxiliary carriers *Chuyo*, *Taiyo* and *Unyo*, where they were then re-fitted for tropical use and flown to Rabaul on the last leg of the long delivery route. Only about 50 out of the 60 that started out on the journey each month finally reached Rabaul, the others being lost at sea due to poor navigation, or through accidents, bad maintenance or sporadic combat losses.

By February, the first arrivals began to reach the 4th Air Army at Ambon and Rabaul, led by the 45th Attack Regiment re-assigned from Manchoukuo, followed by the tardy 208th Light Bomber Regiment that had been delayed at Truk. The light bombers were assigned to the army side of Rabaul's Vunakanau Airfield, where they were clustered with a growing inventory of aircraft. By the end of April each unit had about 30 99 Sokei bombers at Vunakanau. By May some 300 army aircraft of all types had reached Rabaul, with more flying in on an island-hopping route that had the land-trained army crews flying from Formosa to Peleliu, or from Borneo through the Celebes, to Wewak in northern New Guinea, with the last leg to Rabaul. The new arrivals barely replaced the losses the JAAF was suffering on the ground at Rabaul, for the Japanese base was under constant attack by USAAF 5th Air Force bombers based in southern New Guinea. By the end of July the JAAF had lost 250 of its aircraft, with over 200 of them destroyed on the ground. Virtually useless at Rabaul, and providing a poor defence for Japanese ground forces in New Guinea, Imperial Headquarters in Tokyo came to the audacious conclusion that the 4th Air Army should move into New Guinea in force, leaving the naval air forces at Rabaul to defend the Solomons and New Britain. Working around the clock, Japanese engineers prepared a series of airfields in the Wewak area on the northeast coastal plain of New Guinea. In August and September 1943 the Army Air Forces moved again taking the 300 aircraft left to them to New Guinea. It was a move so ill-conceived and poorly handled,



Red propeller warning stripe appears on fuselage side as light bomber crews were unfamiliar with twin-engined aircraft. (Hideya Ando via Bueschel)

First unit trained as the 45th Attack Air Combat Regiment, formerly flying Kawasaki Ki.32. (R. M. Bueschel)



the JAAF never recovered from the results. Within eight months the JAAF would be virtually destroyed in New Guinea, with final abandonment of the giant island in June 1944.

The "Lily" grows old

With the Japanese along the northern coast of New Guinea, and Allied air bases on the southern coast, the two sides were within fighter range of each other with the rugged Owen Stanley mountains between them. The Allies had the advantage of newer bombers, an established warning system, and advancing naval and ground forces that crept around eastern New Guinea in a series of invasions that moved the bomb line closer and closer to the Japanese bases. The Japanese had the advantage of massive inpourings of equipment, pilots and ground crews. They were the cream of the army, veterans of the Asiatic campaigns, and eager to see action. They barely got the chance, for as soon as the 4th Air Army was established at Wewak, the Allied air raids began.

The JAAF in New Guinea was destroyed on the ground. Army Air Headquarters in Tokyo estimated that the JAAF lost 700 aircraft in New Guinea. In human terms, this meant that whole units were destroyed before they could get into action. In a paranoid desire to save New Guinea, the JAAF fed unit after unit into the maw. As the original 99 Sokei units at Wewak were cut down, the JAAF drained its forces in China, Burma, Sumatra and Japan to provide the close-support tactical bombers so desperately needed to support the Japanese Army ground forces. The 34th Light Bomber Regiment was pulled out of Thailand and Burma; the 75th Attack out of Sumatra, and by March 1944, when the 4th Air Army evacuated the Wewak area and moved to Hollandia in western New Guinea, the 12th Regiment was being converted to a light bomber regiment to serve at Hollandia.

The new units brought an advanced model of the "Lily" bomber into New Guinea. First produced in January 1943, the Ki.48-IIb Model 2B was externally similar to the Model 2A, but could carry a substantially increased bomb load. Some of the Model 2's were fitted with extended dorsal fins and dive brakes for dive-bombing operations, although the crews usually removed the brakes to reduce weight. Unable to operate freely in the daylight hours, the "Lily" bombers were used at night in harassment raids on Allied airfields. Later models, produced as the Ki.48-IIc Model 2C, had a 12.7 mm. Type 1 machine gun in the flexible rear dorsal position instead of the 7.7 mm. Type 89 used earlier, and an additional 7.7 mm. Type 89 weapon that could be fired out either side of the glazed nose. Other minor variations led to production models Ki.48-IId Model 2D and Ki.48-IIe Model 2E, and by the time production of the series ended in November 1944 due to obsolescence, a total of 1,408 Model 2 99 Sokei's had been produced.

The 99 Sokei fared better in China and Burma where it remained an effective threat against Allied and Chinese ground troops. Its protection was geography, for the Allied air forces in the China-Burma-India (CBI) theatre remained numerically weaker than the Japanese forces until early 1945. By December 1943 the JAAF had 750 aircraft in China, Indo-China and Formosa. A year later, in December 1944, this number had grown to 1,200, of which an estimated 416 were army bombers. The maintenance of this force was difficult, as losses to the RAF in Burma and the AVG "Flying Tigers" in China were high, at the very time that JAAF units were being moved from the theatre to New Guinea.

In China, the 6th Attack, 16th and 90th Light Bomber Regiments flying Ki.48-IIa and Ki.48-IIB light bombers maintained constant pressure on the AVG's Chinese bases. The cost was high. In JAAF raids on Kunming between 28 April and 22 December 1943, the Japanese Army pitted an estimated 165 fighters and 121 bombers against the airfield, with the AVG claiming 30 bombers destroyed,



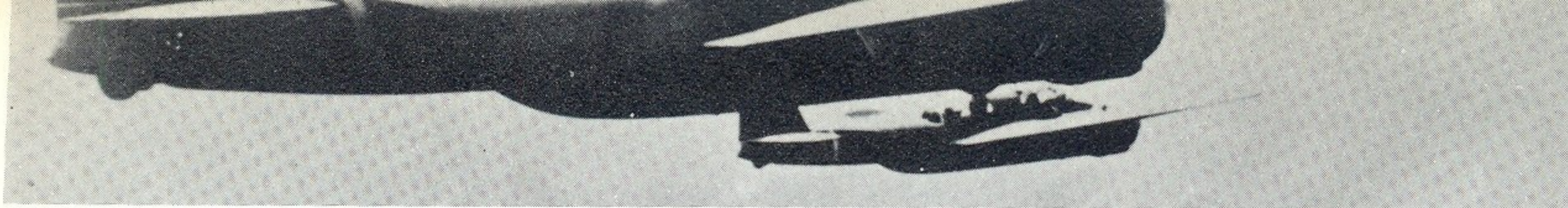
Replacing the Kawasaki Ki.32, a 99 Sokei of the 75th Attack regiment takes off in China, autumn 1941. (Sekai No Tsubasa via Bueschel)

18 probables and nine damaged, with 18 bombers shot down in the 20 September raid alone. As Allied strength increased in 1945, the Japanese Army bomber units began to show a complete unwillingness to fight, and soon ceased their attacks.

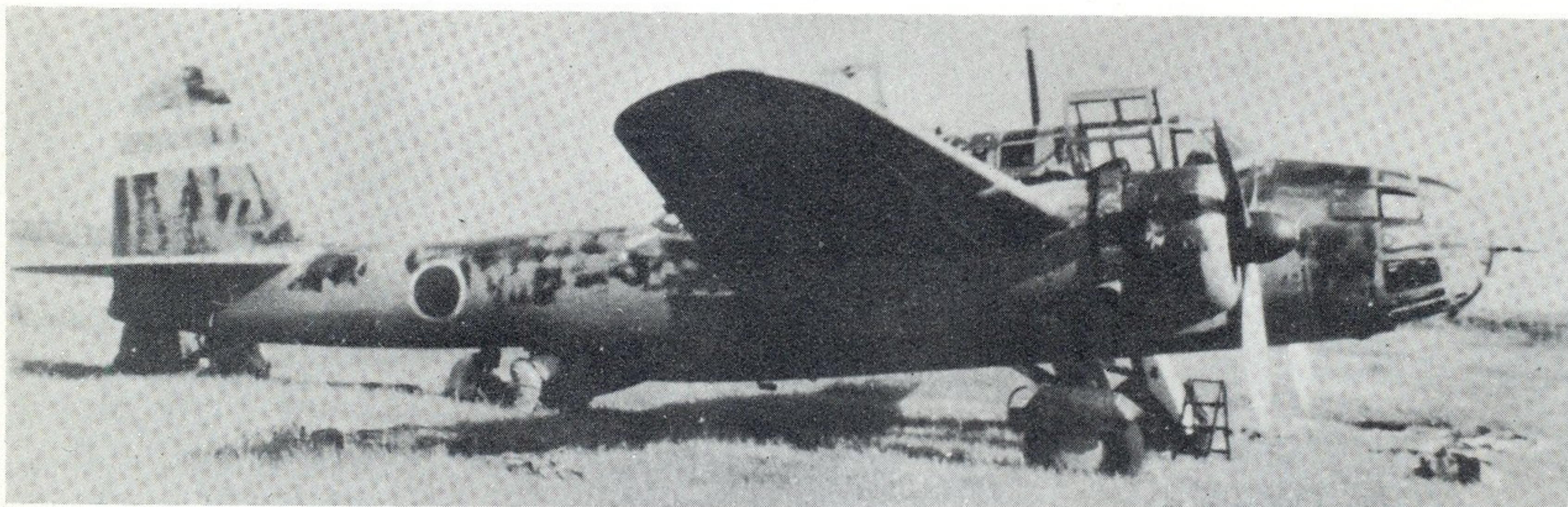
In the Burma-India theatre the balance of power shifted even faster. The Allied loss of Burma early in 1942 put the JAAF within striking distance of India, and by October 1942 Japanese light bombers were attacking the Assam air bases. The tide began to turn early in 1943, when Japanese losses began to jump. When a Japanese force of 46 aircraft was intercepted by 32 Curtiss P-40's over Dinjan, India, on 25 February, 28 of them were shot down. Constant Allied raids on JAAF bases in northern Burma forced abandonment of these facilities, and the JAAF pulled back. By January 1944, following the transfer of JAAF units to New Guinea, the JAAF was estimated to have only 277 aircraft remaining in the Burma area. The 8th and 35th Light Bomber Regiments,

The 99 Sokei was first spotted by observers on fields in North China early in 1941, alerting Americans in China to the new bomber type. (Hiko Shonen via Bueschel)

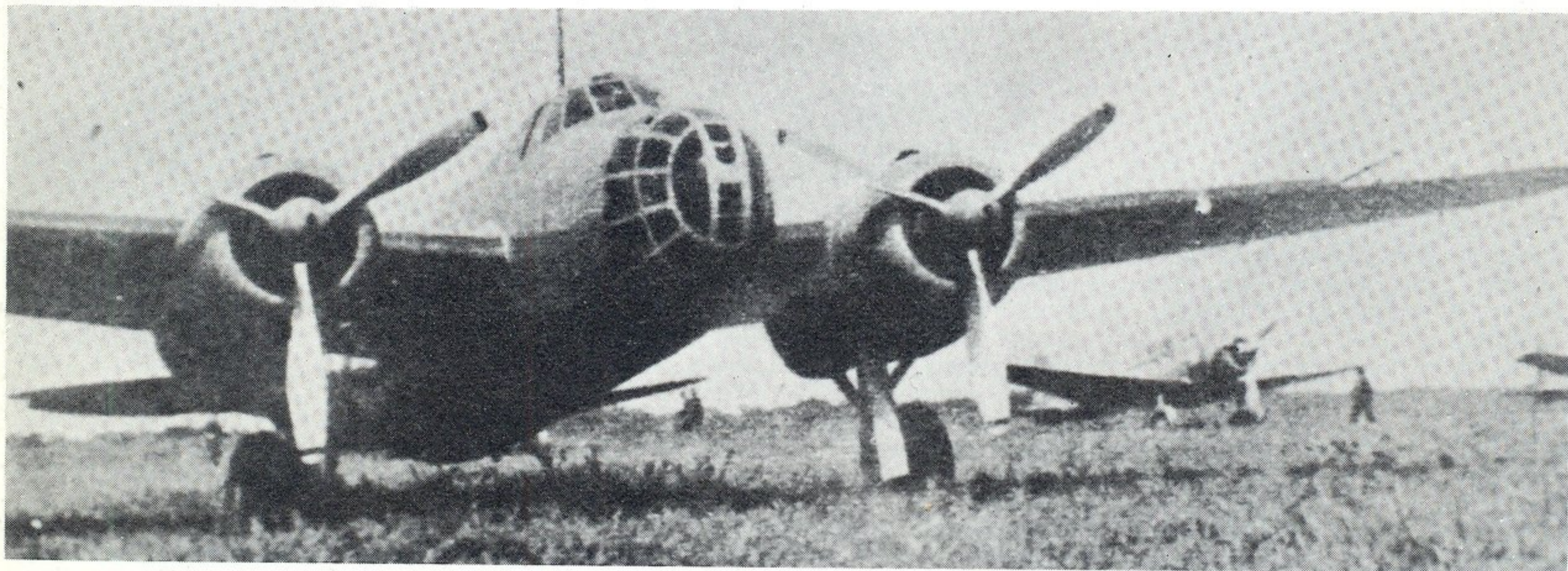




Above: The Ki.48-la 99 Sokei went to North China late in 1940 for combat evaluation with the 45th Regiment. (Hideya Ando via Bueschel)

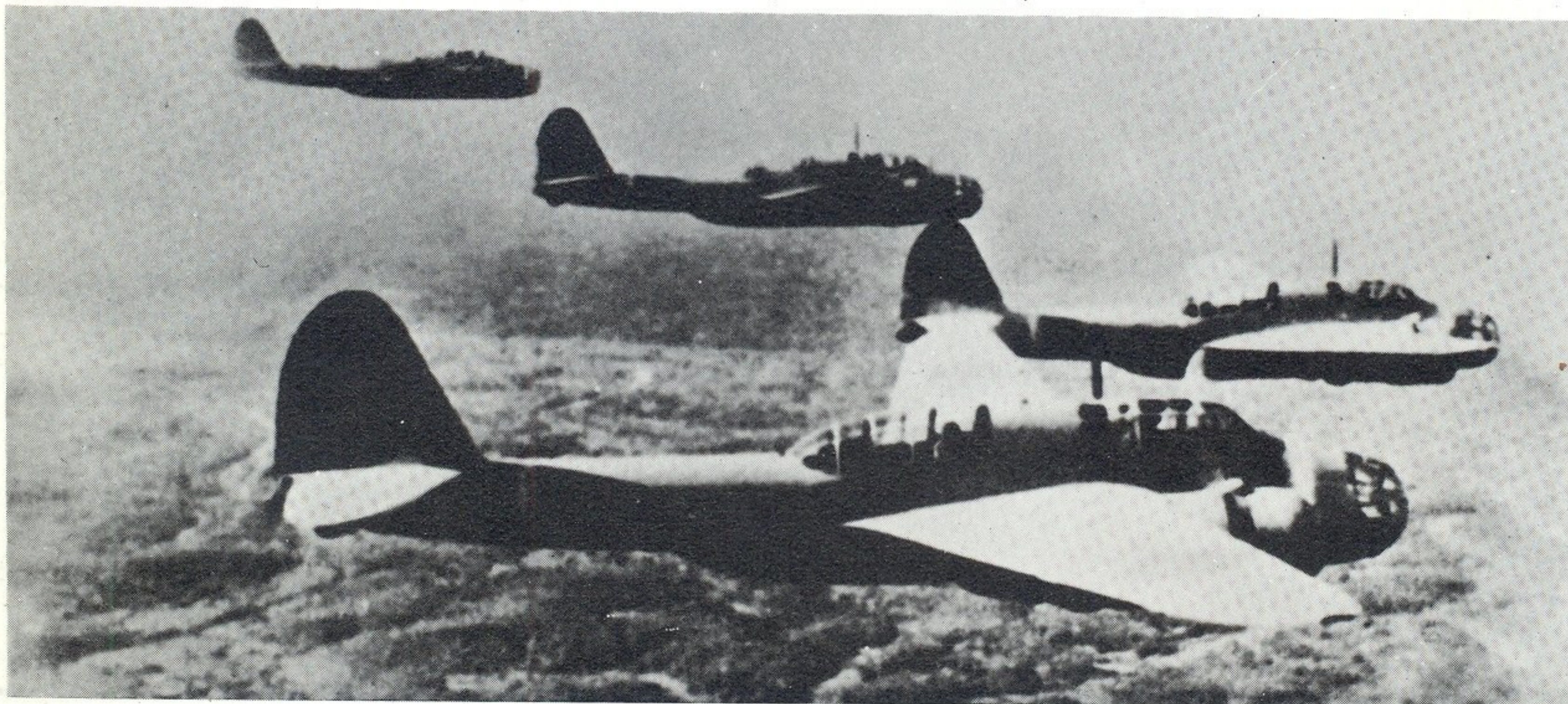


Above: 16th Light Bomber Air Combat Regiment received 99 Sokei bombers in Chosen (Korea) early in 1941. White tail stripes denote 1st Company. (R. M. Bueschel)



Above: 99 Sokei's quickly replaced the JAAF's single-engined light bombers in late 1941. (Hiko Shonen via Bueschel)

Below: By the end of 1941 seven regiments were flying the 99 Sokei. (Koku Fan via Bueschel)



ment, with the 99 Sokei light bombers taking a leading role. Flying from Thailand to Rangoon to refuel, then hopping north to any of the dozens of auxiliary airfields in Burma, the light bombers could strike quickly across a wide front and stage back to their home bases just as rapidly. Attacks were made in this manner against India, Burma and southern China throughout 1944. The standard procedure was to send two or three Ki.48-IIb bombers out on night missions against widely-dispersed targets in nuisance raids. Even the B-29 Superfortress base at Kharagpur was attacked by 99 Sokei bombers when three of the nagging raiders struck at the base on Christmas night of 1944, although all of them were shot down by defending RAF night-fighting Beaufighters.

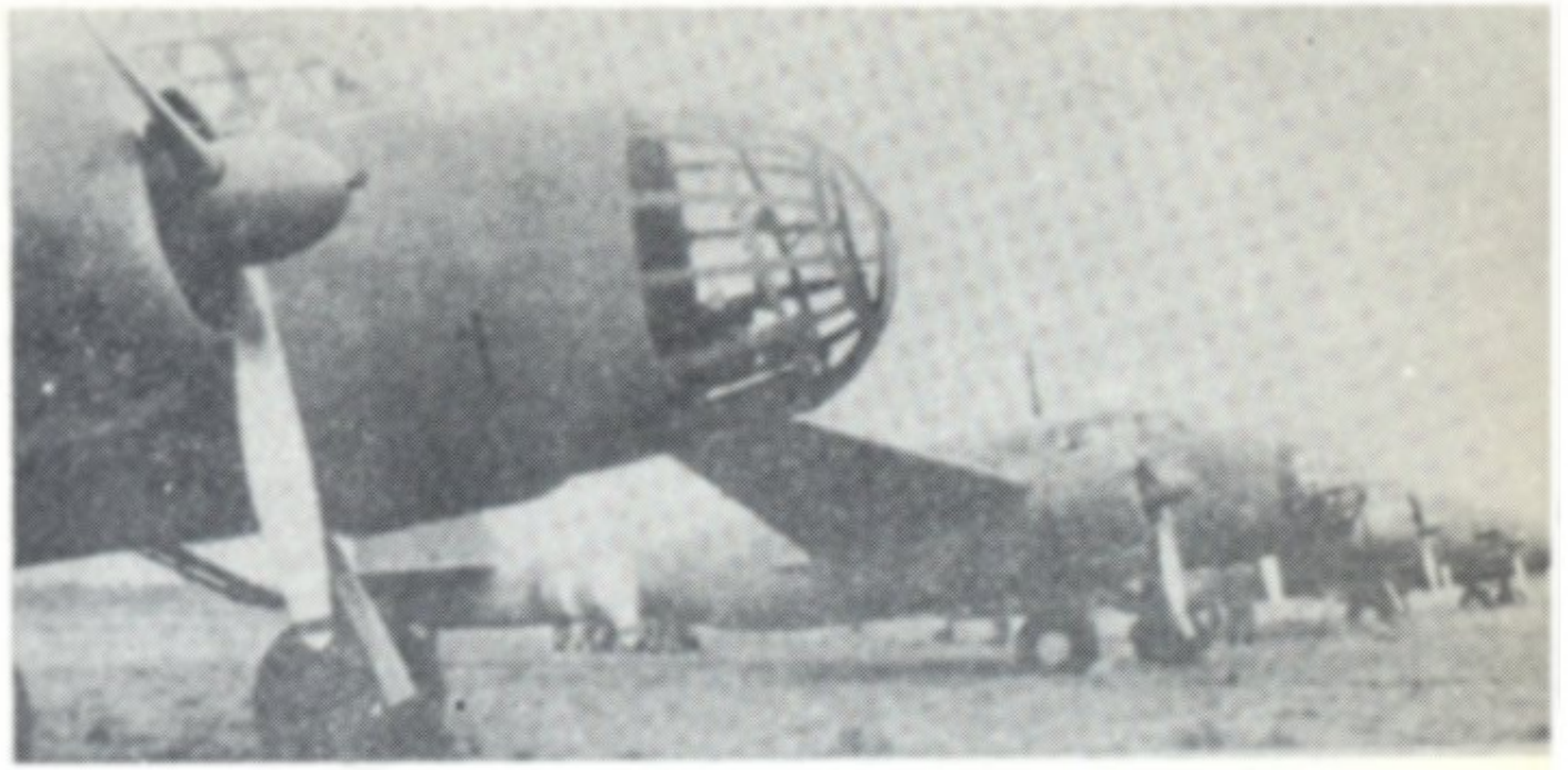
Standing at the last ditch

Destroyed in New Guinea, forced back in Burma, and barely holding their own in southern China, the 99 Sokei light bomber units had yet another campaign to face. It would be their last as organized units. By July 1944 Imperial Headquarters had faced the fact that an Allied invasion of the Philippines or Japan itself was imminent. Plans were drawn up for a total commitment of army and navy air strength at any one of four points, each designated as a Sho-operation. When it became obvious in October 1944 that the Philippines were next, Sho-Operation No. 1 was activated. The 2nd Air Division of the re-formed 4th Air Army made arrangements to base its light bomber "Lily" units at Clark Field and Lipa on Luzon. On 24 October 1944 the JAAF launched a series of three attacks against Allied invasion forces in Leyte Gulf, the last at dusk. 99 Sokei bombers of the 12th, 75th and 208th Regiments reformed, from remnants that had escaped from New Guinea, and equipped with late-model Ki.48-II aircraft, took part in the attacks. Their losses were heavy. Their mission to destroy the invasion fleet was also a failure, and by the end of the week losses in the air and on the ground were so high the units were all but useless. In November the "Lily" equipped 3rd Attack Regiment was moved into the Philippines from the Kuriles, and in December the 6th Attack Regiment was moved up from Borneo. The poorly-armed "Lily" bombers quickly became duck soup for Allied fighter pilots in the air. By January 1945 conventional Japanese air power in the Philippines had been wiped out, and only the *Taiatari* "Body Crashing" missions were a threat.

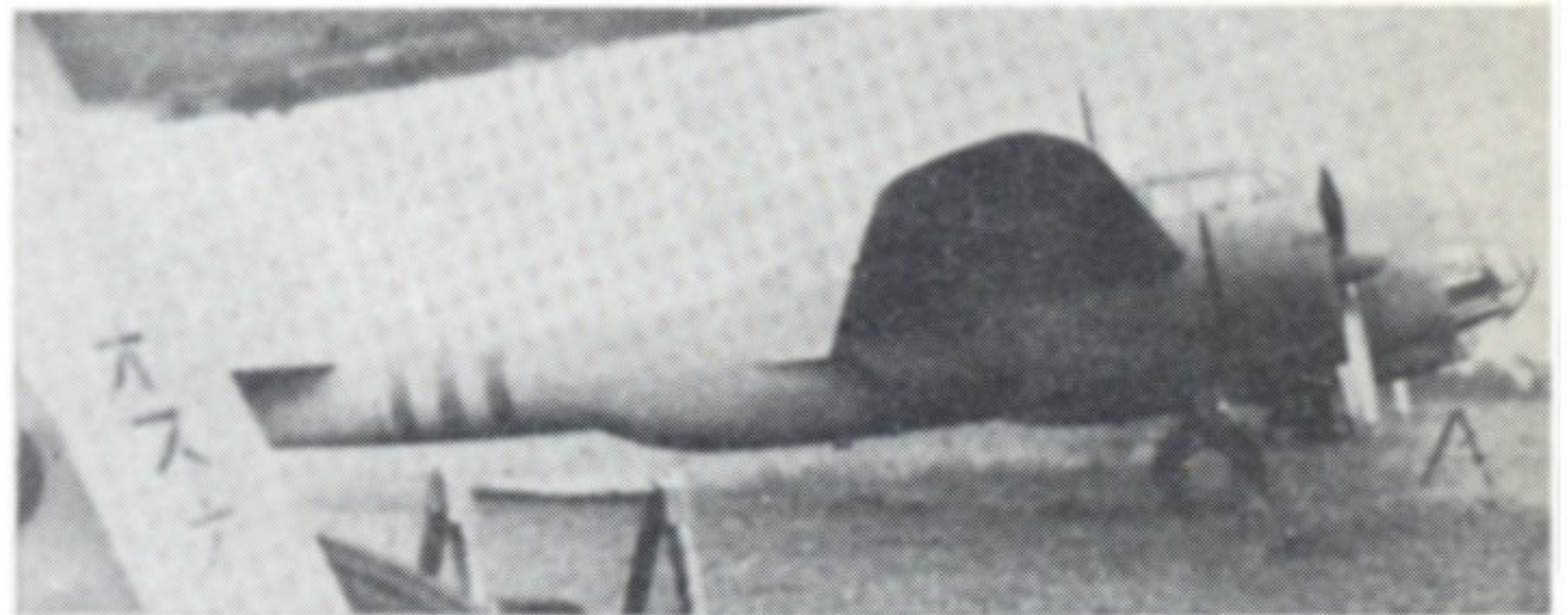
With the end of the Philippines campaign the 99 Sokei became a rarity in the sky. Many of the 99 Sokei's were converted into special attack suicide bombers carrying an externally mounted 1,764 lb. bomb and used in the *Tokko* general attacks around Okinawa in April and May 1945. The "Lily" was also used in nuisance night raids on Allied airfields on Okinawa, and sporadically in daylight attacks during the campaign. Others were retained in Kyushu to be used in suicide attacks against Allied troop transports in the anticipated invasion of Japan. They were found there by occupation forces at the end of the war.

Odd Mods

During its prime, and even after the 99 Sokei was no longer a first-line attack aircraft, the bomber was used for a wide variety of tactical and theoretical experiments. An early modification was the development of the Ki.48-IIa-Kai as the army experimental multi-seat convoy fighter which received the Ki.81 designation. Conceived early in 1942 as a heavily-armed escort for 99 Sokei bombers to protect them against attacking fighters, the Ki.81 proved to be too cumbersome and slow. Various forms of armament were tried on four

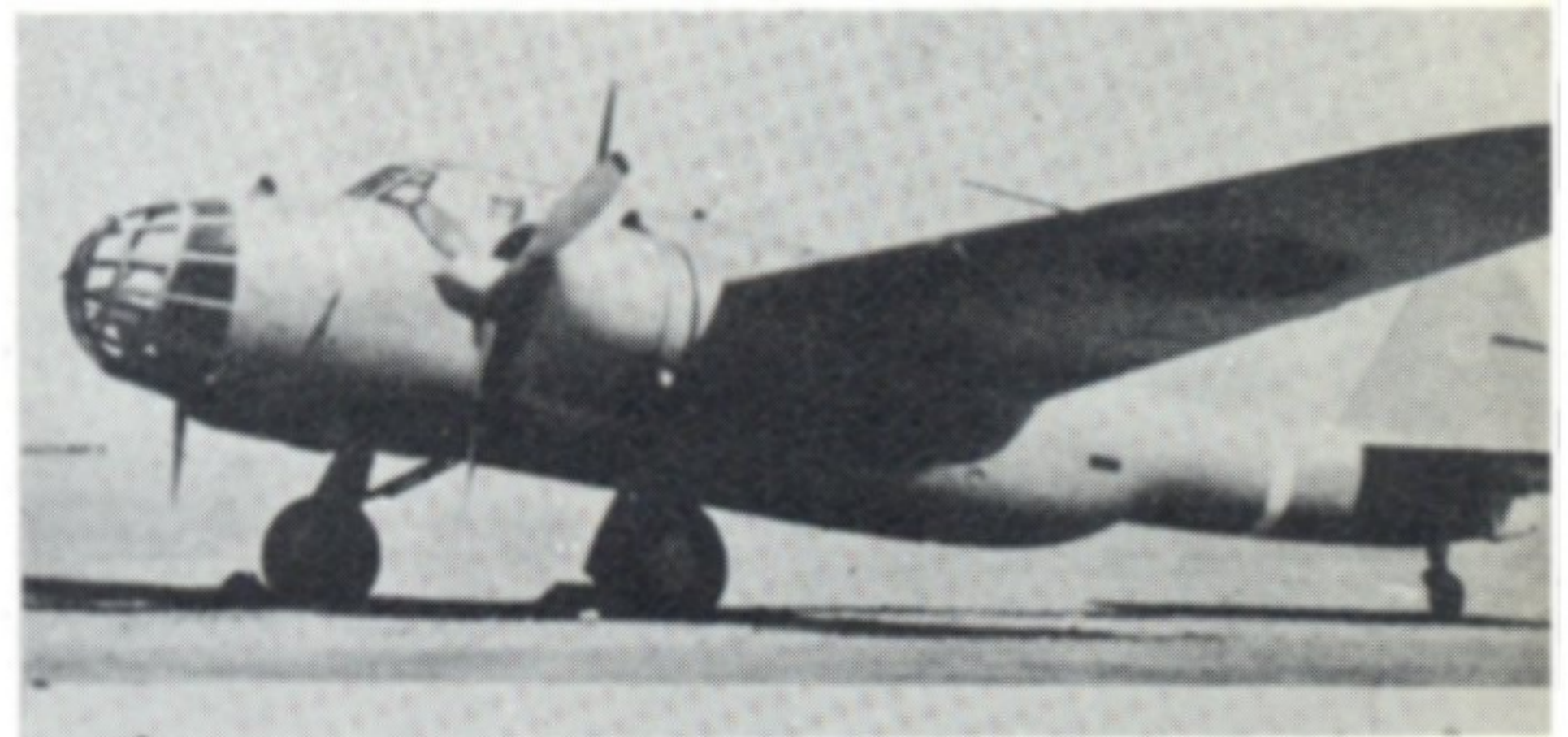


Above: Training at Hokota was hard-pressed by late 1940. (Koku Shonen via Bueschel)



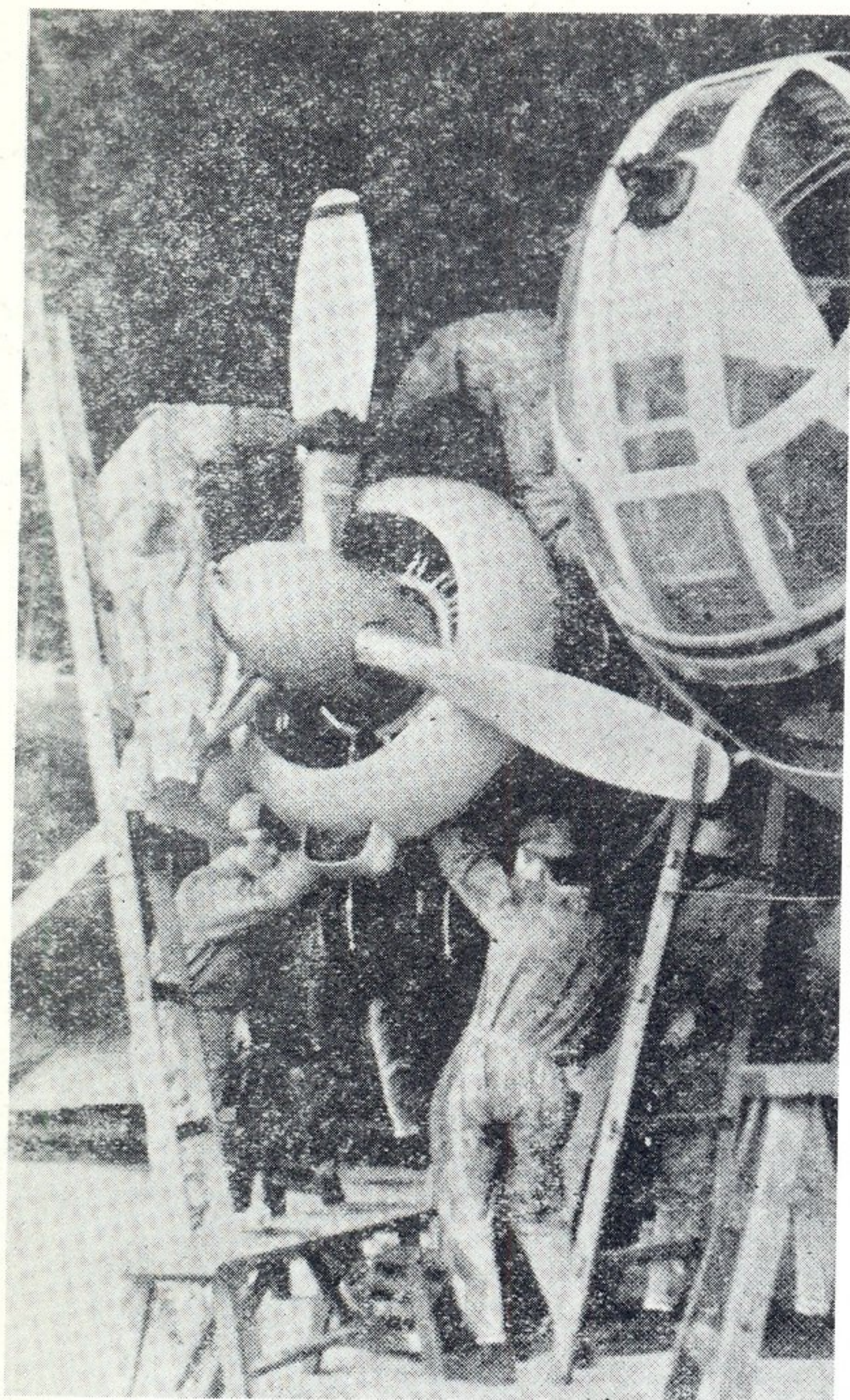
Above: Light aluminium ladder gave crew access through nose panels. (Sora via Bueschel)

Below: 99 Sokei was assigned to unit training at Mito Army Flying School late in 1940. (Sekai No Kokuki via Bueschel)



Below: 99 Sokei had a crew of four: pilot, navigator-gunner, bombardier-gunner, radioman-gunner. (Sora via Bueschel)





Training for the coming Pacific War was intensified in late 1941. Students at the Army Aviation Maintenance School at Tokorozawa replace a propeller. (Hiko Nippon via Bueschel)

modified prototypes, ranging from five 7.7 mm. Type 89 and 12.7 mm. Type 1 machine guns to a 20 mm. Ha.5 cannon mounted in an electrically or hydraulically operated revolving dorsal turret. Created at the 3rd Air Technical Laboratory at Tachikawa under the direction of Major Masaki, the turrets proved to be troublesome and the project was dropped after testing in 1943.

A more ambitious project was initiated in October 1944 when the 1st Army Air Arsenal was given the assignment of converting various JAAF bomber types to special attack aircraft. By reducing the 99 Sokei crew to two, a single 1,764 lb. bomb could be mounted internally, triggered by a long fuse-pole extending from the nose that would explode the bomb on impact. Turned over to the Air Examination Division of the Army Air Test Department at Fussa, the Ki.48-IIb-Kai Type 99 special attack made its first flight on 12 November 1944 under the supervision of Major Hideo Sakamoto. A total of three prototypes were ultimately modified from standard Ki.48-IIb light bombers and plans were made to equip a special JAAF *Tokko* unit with the suicide bomber.

The reliable and measurable flight characteristics of the 99 Sokei also made the aircraft useful as a test bed in the embryonic stages of the JAAF's jet propelled "Revolutionary Aircraft" programme. When the army Ne.00 turbojet unit was ready for flight testing in August

1943 the prototype engine was mounted under the bomb bay on the fuselage centre line of a modified Ki.48-IIb. Tested in the air at Fussa in September, the small jet provided data for the development of the more powerful army Ne.10 turbojet and the later axial-flow Ne.12 jet engine of 705 lb. thrust completed in August 1944.

When the Kawasaki firm was awarded a developmental contract for the Ki.148 army experimental I-Weapon Type 1, Model B guided missile in July 1944, the 99 Sokei was picked by the firm as its initial "parent" aircraft. A total of four standard Ki.48-IIb light bombers were modified to carry the 1,650 lb. missile into the air for release and control tests. Completed in July 1944, but delayed awaiting Ki.148 prototypes, the "parent" and guided missile team made its first flight in October. Carrying a 661 lb. warhead, and guided after release by radio transmission with a simple stick control in the rear seat of the "parent" aircraft, the Ki.148 was designed for use against invasion shipping. The "parent" 99 Sokei aircraft were used to test 30 Ki.148 prototypes and the initial examples of a production run of the guided missiles. The testing programme was a difficult one, for the missiles launched badly and easily went out of control. The testing programme reportedly destroyed 50 of the glide bombs before reasonable success was achieved in the spring of 1945. The 99 Sokei was never intended as the operational "parent" aircraft and was only being used for evaluation and testing, with service Ki.148 models to be launched by specially-equipped Ki.102 and Ki.67 Hiryu aircraft.

The final 99 Sokei development is reportedly the Ki.174, described as a single-seat adaptation of the twin-engined light bomber. In the absence of hard data it can only be assumed that this late Kitai designation applies to a special attack or anti-shipping version of the 99 Sokei, the last light bomber type to reach production for the JAAF.

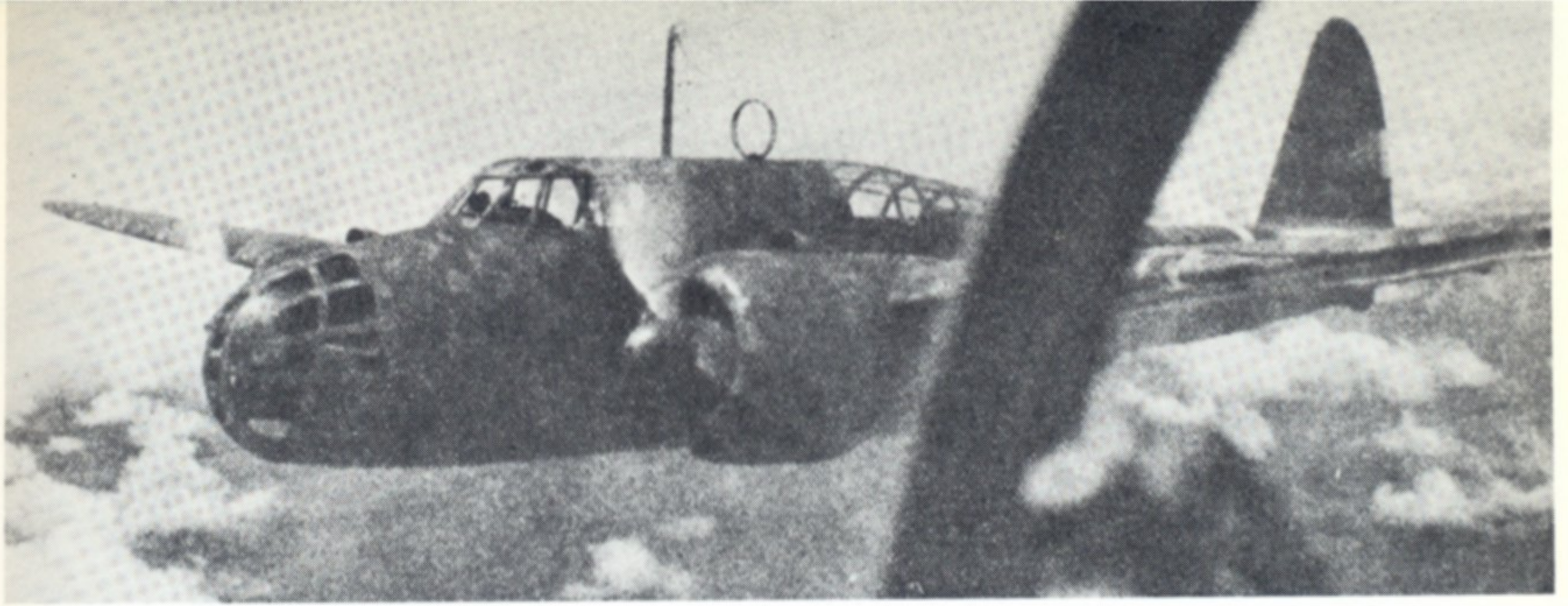
Flying Foreign Flags

With the collapse of Imperial Japan's wartime empire, the 99 Sokei became one of the few Japanese aircraft types to see service in foreign air forces. Scattered across wide fronts and serving wherever the JAAF saw combat, random examples of the Ki.48-IIb found their way into the combat forces of groups and governments that had been both Allied and opposed to Japan.

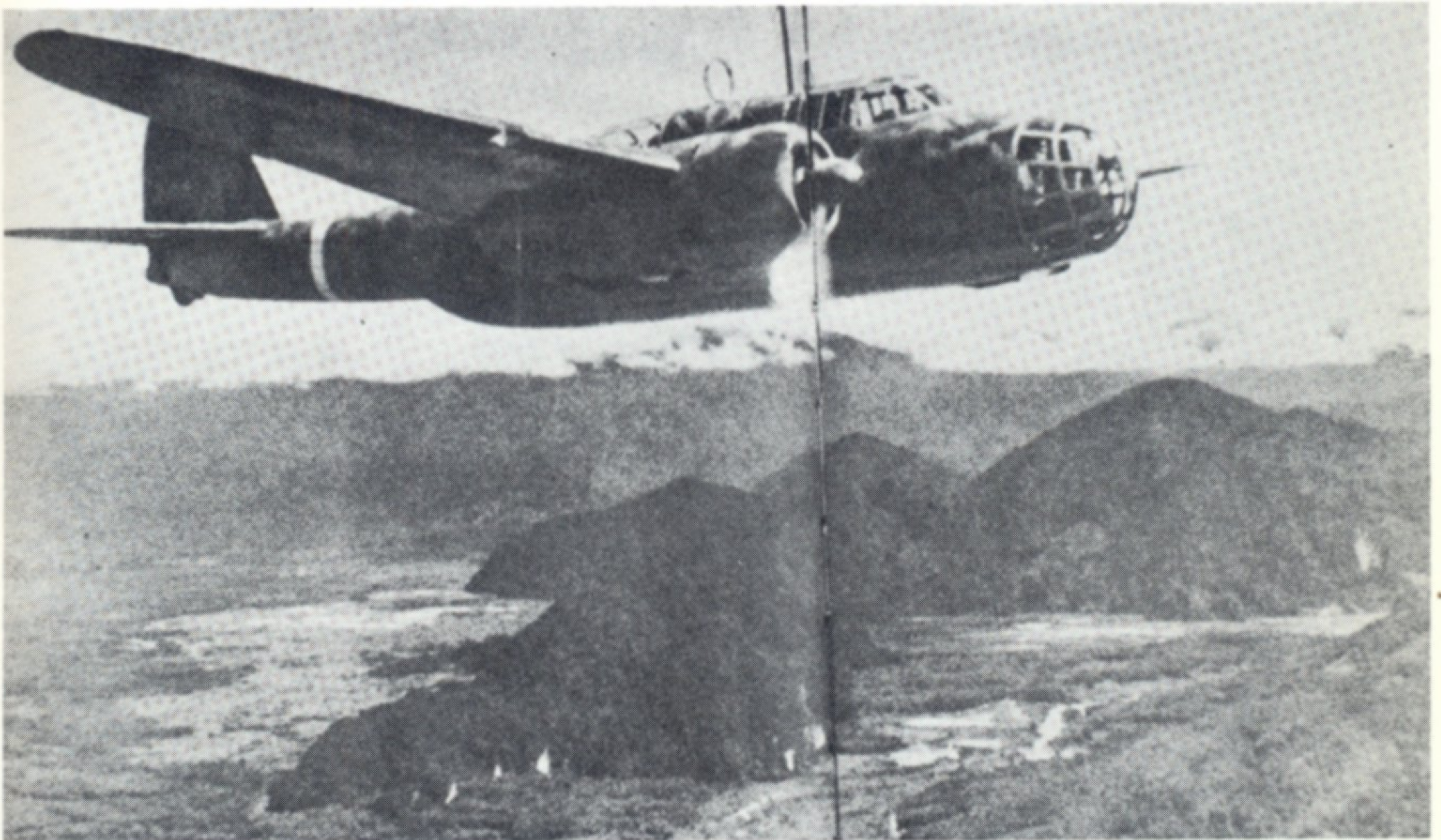
As the Japanese left Java, discarding substantial numbers of army and navy aircraft in a mangled junk pile at Djakarta, the Indonesian revolutionaries took over the site and began to reassemble all of the usable aircraft they could acquire. One 99 Sokei was put together from bits and pieces of a number of aircraft to become the first twin-engined bomber in the air arm of the Indonesian People's Security Force. It was used for some time until it was replaced by more modern aircraft.

In China a number of Ki.48-IIb 99 Sokei bombers of the 16th and 90th Light Bomber Regiments were taken over by the Nationalists at Nanking, Hankow and Peking; and by the Chinese Communists in Manchuria and North Korea. The Nationalists quickly adorned their war prizes with Kuomintang markings, but do not appear to have made active use of the former Japanese bombers.

The Chinese Communist Red Army Air Force, on the other hand, eagerly adopted their new aircraft and soon had Japanese mercenary ground crews and pilots at work on the maintenance and operation of their bombing force. A flight-training school was established at Harbin, in Manchuria, and Japanese instructors trained Chinese Communist pilots in the use of the liberated air force. Nationalist defections increased their ranks, and the 99 Sokei became a standard light bomber of the Communist air arm. With the formation of the People's Liberation Army Air Force in July 1946 the 99 Sokei remained in Communist Chinese service during China's civil war until operational losses and lack of spares put them out of service.



Above: Early in the war, unit markings were removed from photographs released by the Army Information Department. (Sekai No Tsubasa via Bueschel)



Above: Ki-48-II over the Philippines, January 1942. (Sekai No Tsubasa via Bueschel)

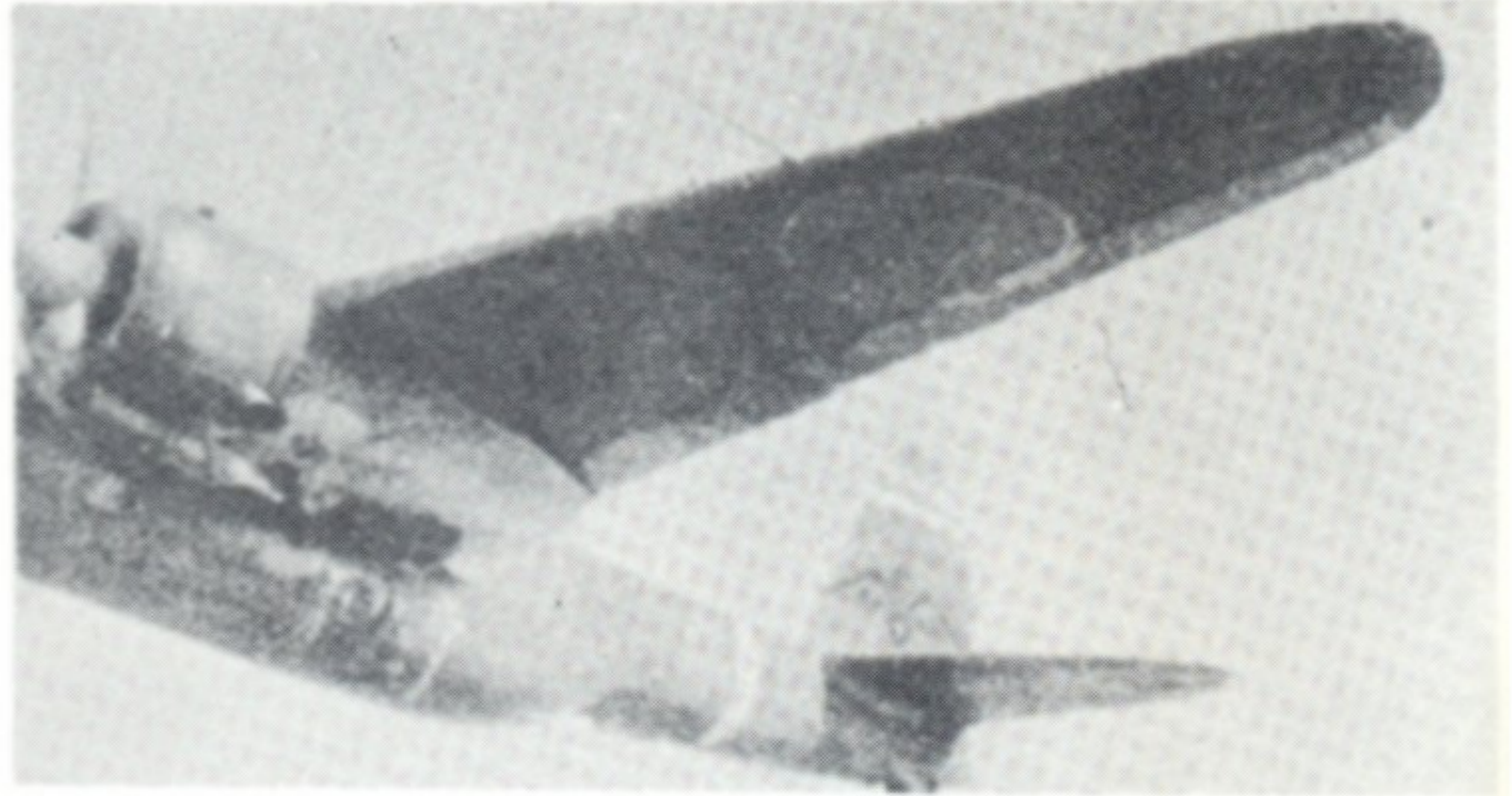
Below: Bombs dropped singly as racks were released. (Sekai No Tsubasa via Bueschel)



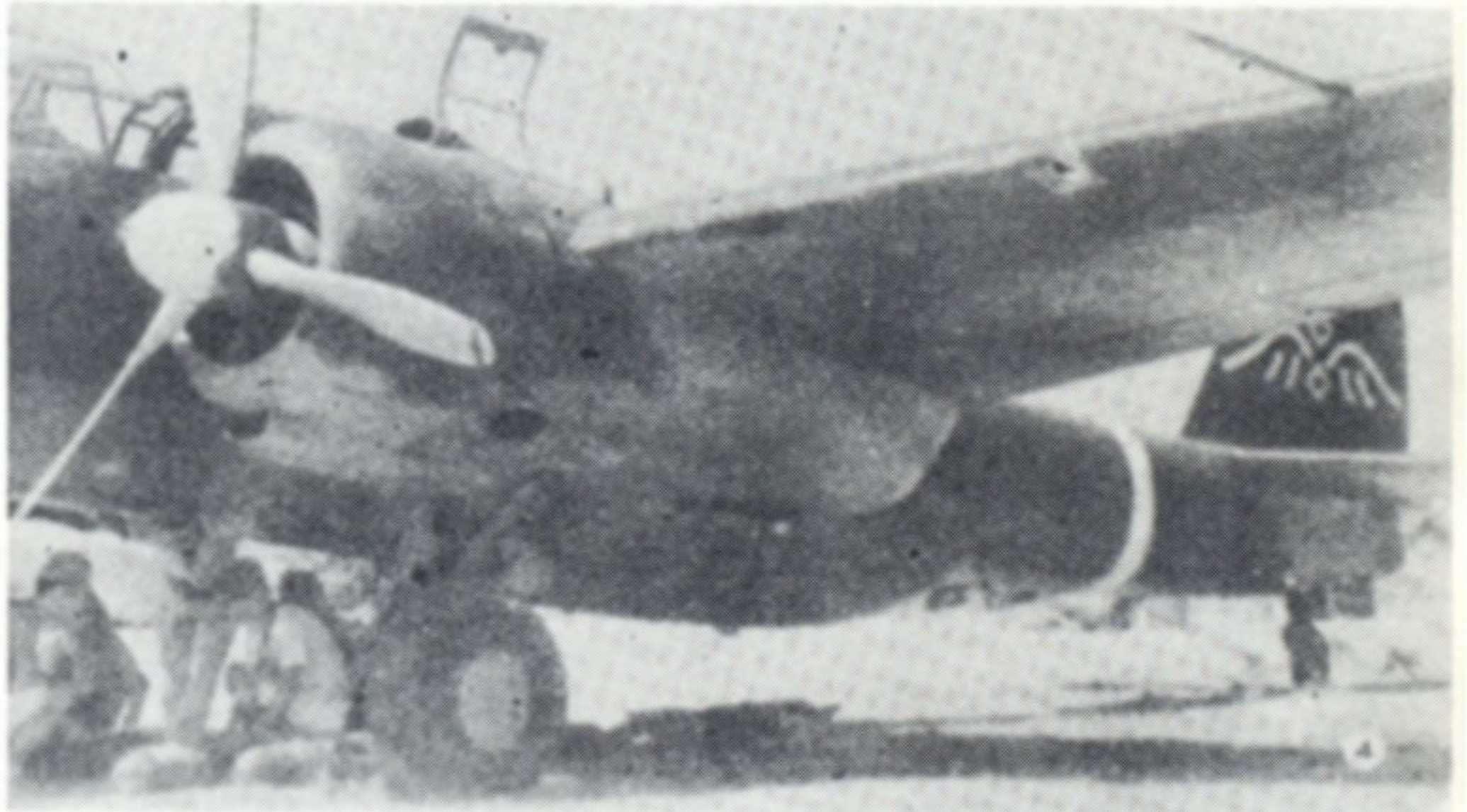


Above: Dorsal gunner's position had ring sight. (Hiko Nippon via Bueschel)

Below: Crew quarters were cramped. (Hiko Nippon via Bueschel)



Above: Tail of 2nd Company Ki.48-lb shows two white stripes and red unit marking. (Koku Shonen via Bueschel)



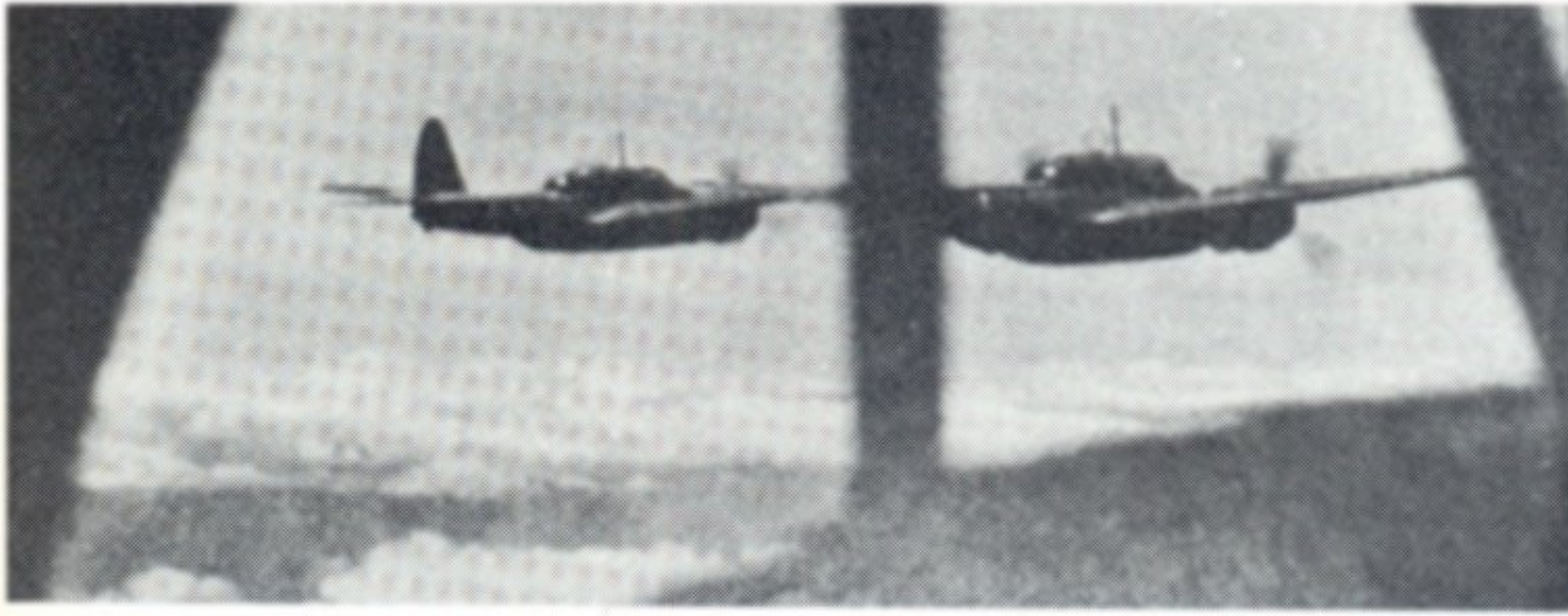
Above: 8th regiment remained in the Burma, Thailand and French Indo-China area throughout the Pacific War. (Koku Shonen via Bueschel)

Below: 2nd Company of 8th regiment marking was red, outlined in white. (Koku Fan via Bueschel)

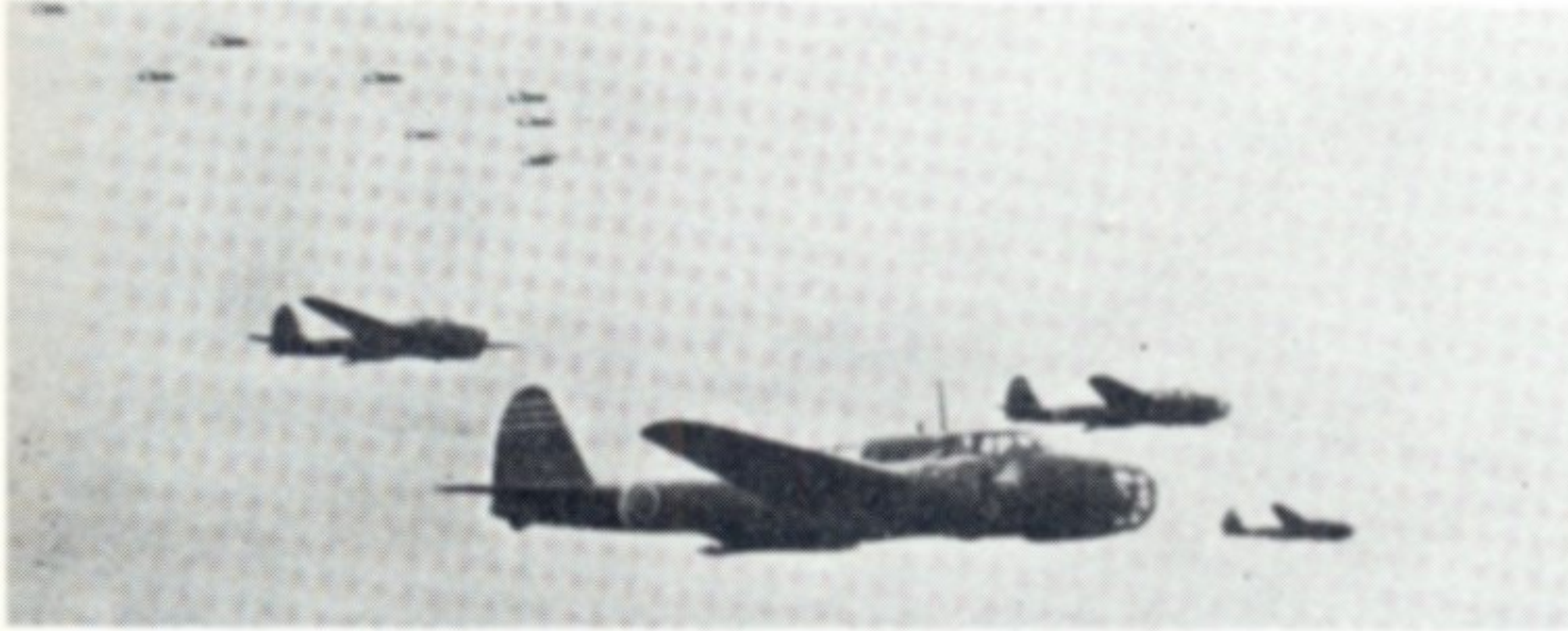


Below: Artist puts finishing touches on white 1st Company 8th Light Bomber regimental insignia on Ki.48-lb in Burma, June 1942. (Hiko Nippon via Bueschel)





Above: Ki.48 bombers flew against Rangoon from bases in northern Thailand. (Umi to Sora via Bueschel)



Above: The 99 Sokei was sometimes flown with bomb bay doors removed to reduce weight and maintenance. (Sekai No Kokuki via Bueschel)



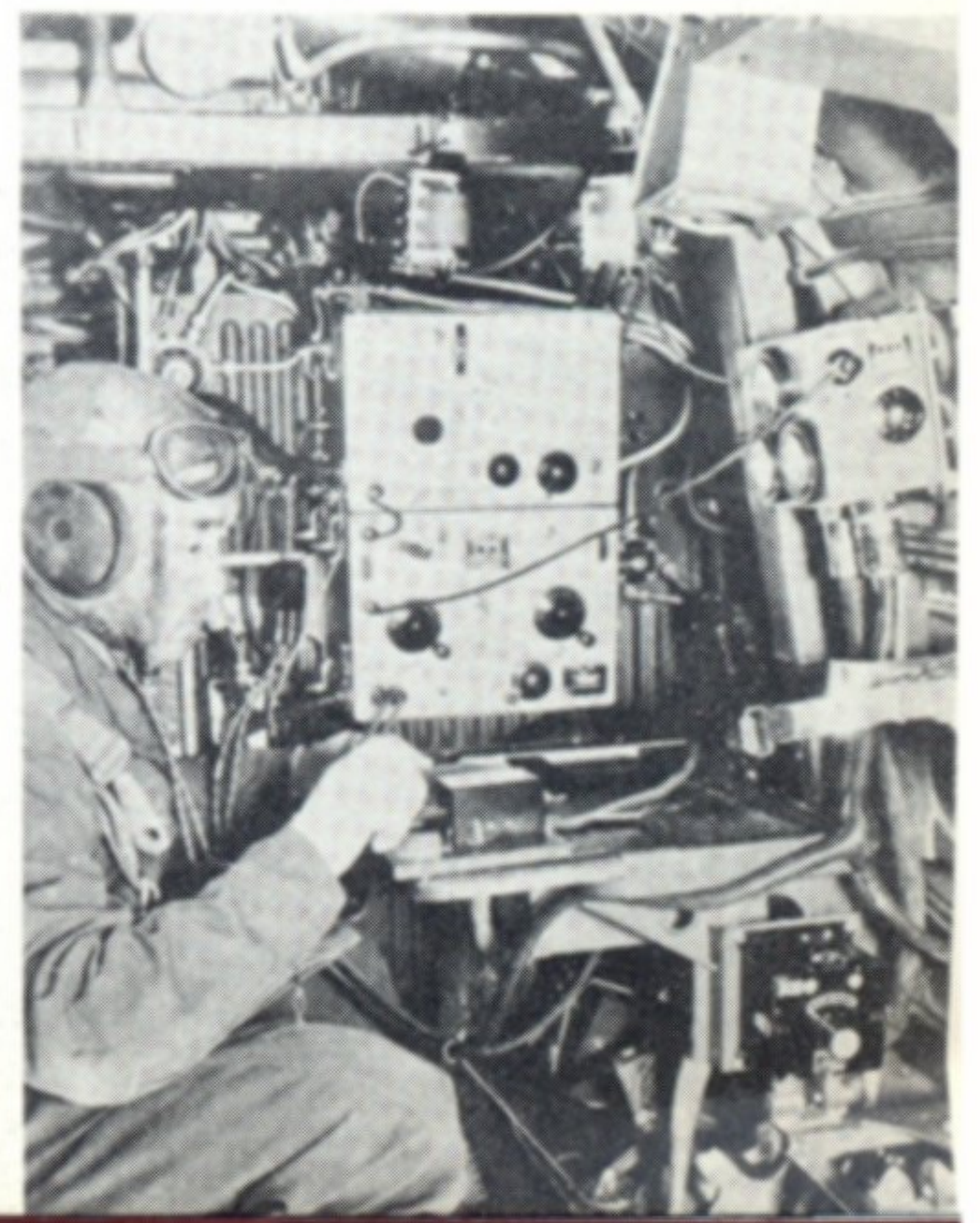
Above: Raids from Burmese bases against Chennault's 14th Air Force at Kunming, China were frequent events in 1942 and 1943. (Asahigraph via Bueschel)

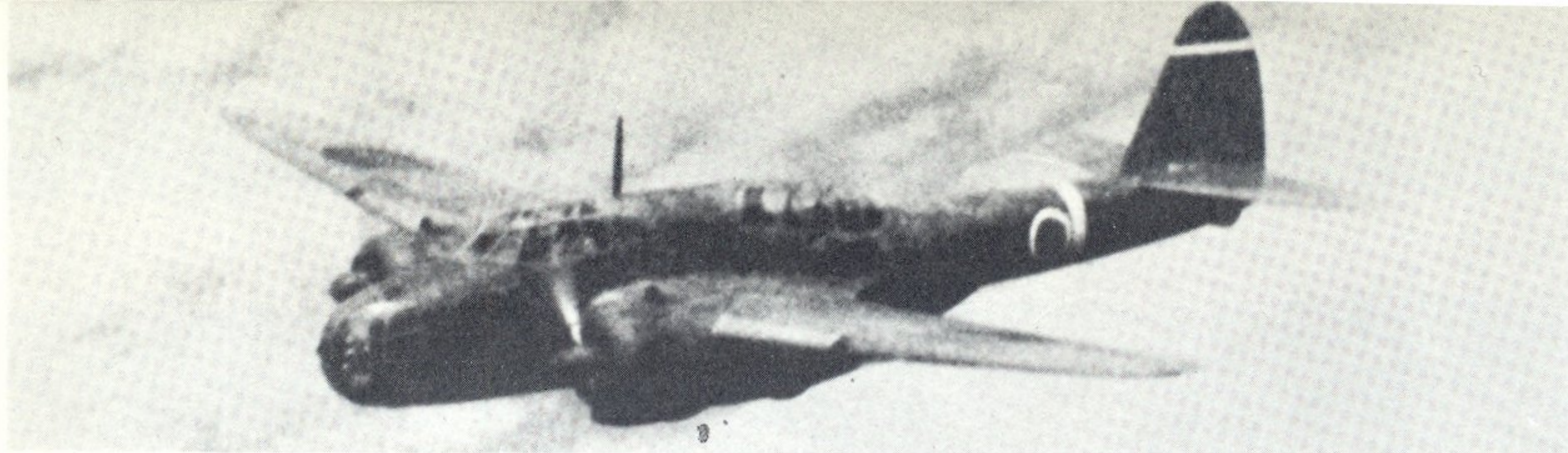
Below: The 99 Sokei looked big, but was actually a small aircraft. (Koku Fan via Bueschel)



Above: Ground crewmen loading bombs into the narrow fuselage of the Ki.48-lb. (Warren D. Ship via Bueschel)

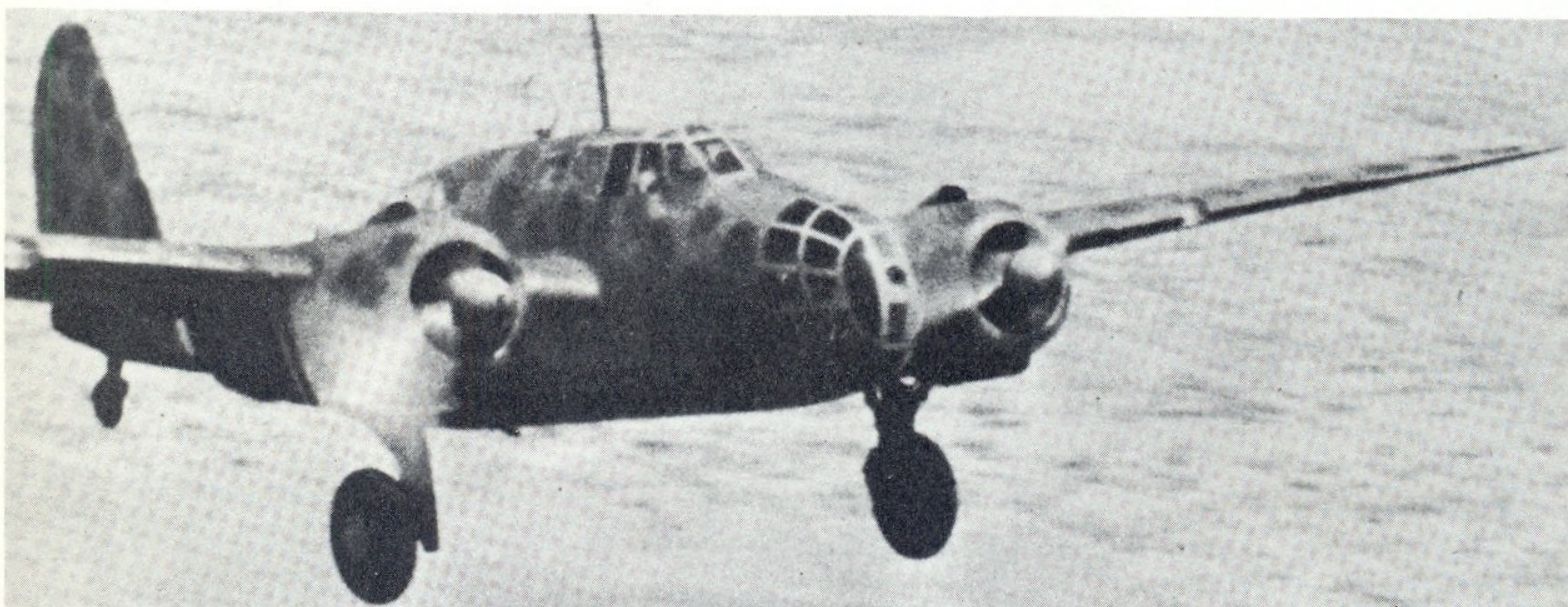
Below: Radioman sat in cramped quarters, doubled on ventral gun position. (R. M. Bueschel)





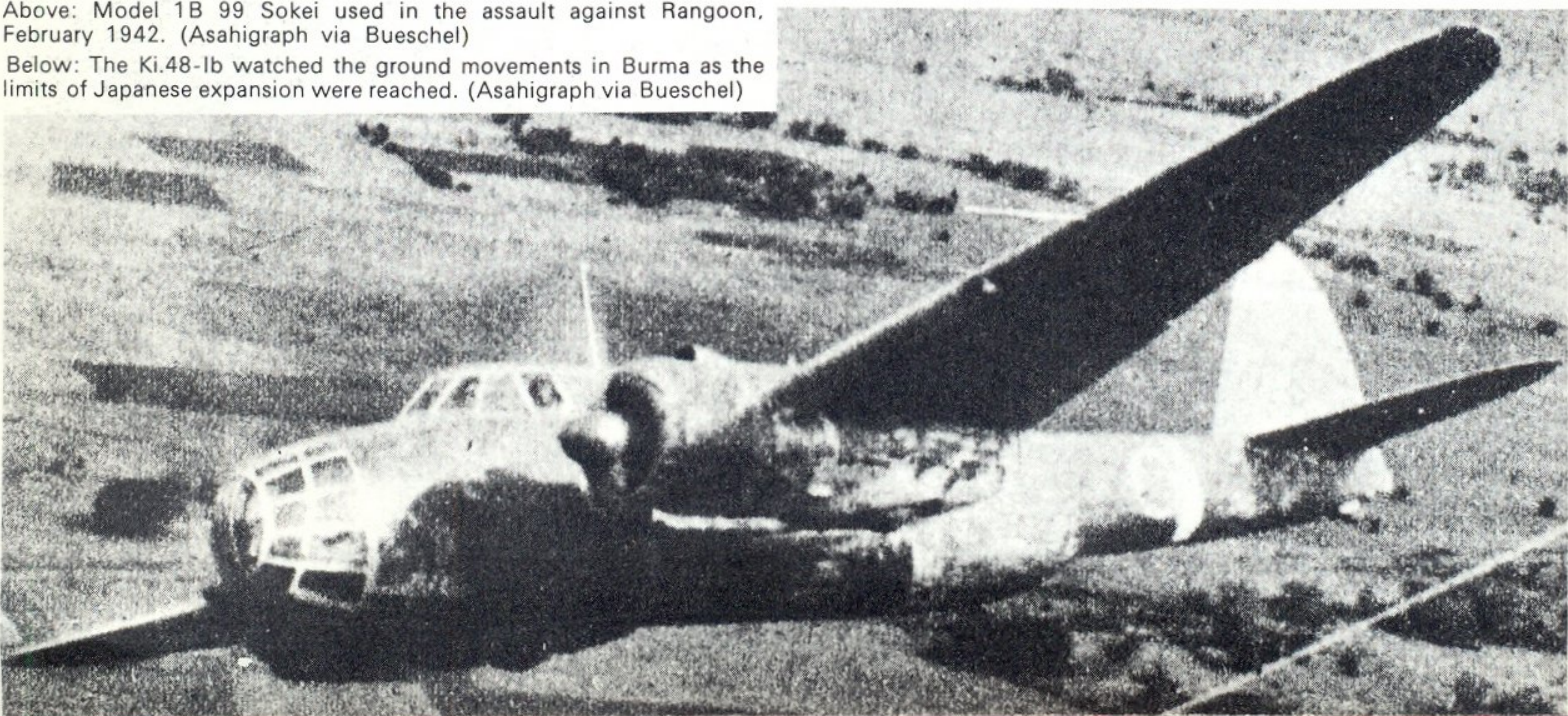
Above: The 99 Sokei was one of the most widely used Japanese bombers over Burma and China in 1942. (Koku Asahi via Bueschel)

Below: First photos of the 99 Sokei appeared in the Japanese press 9 December 1942 (Tokyo date), the day after war came to the Pacific World. (Asahigraph via Bueschel)

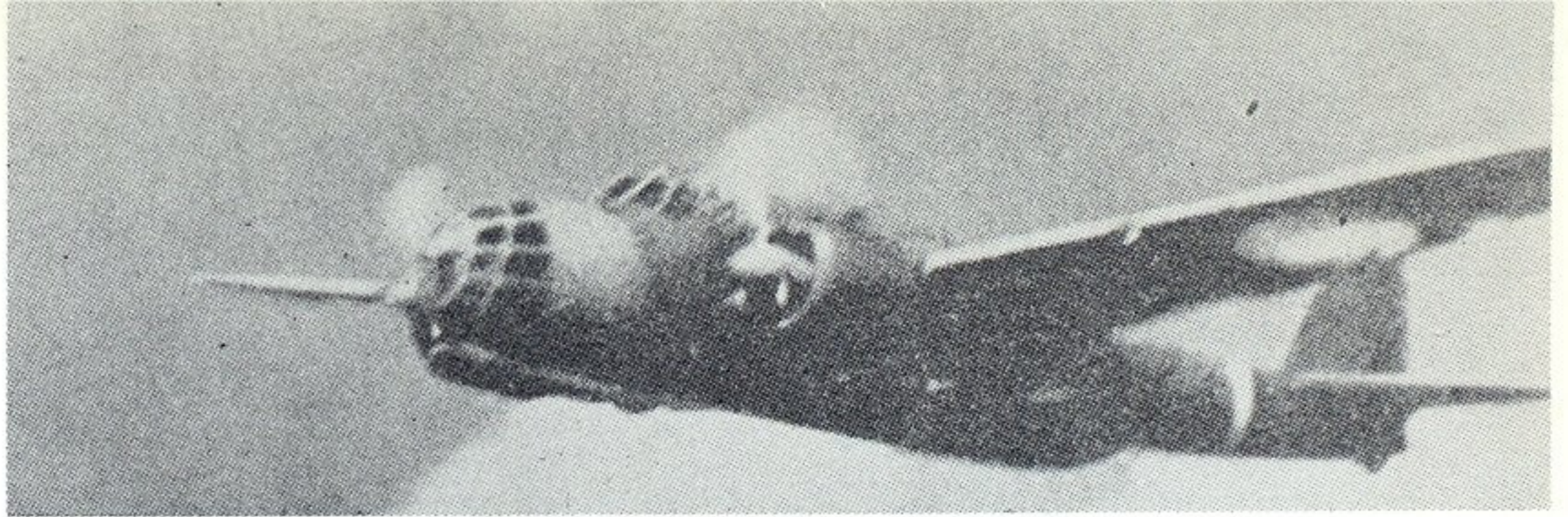


Above: Model 1B 99 Sokei used in the assault against Rangoon, February 1942. (Asahigraph via Bueschel)

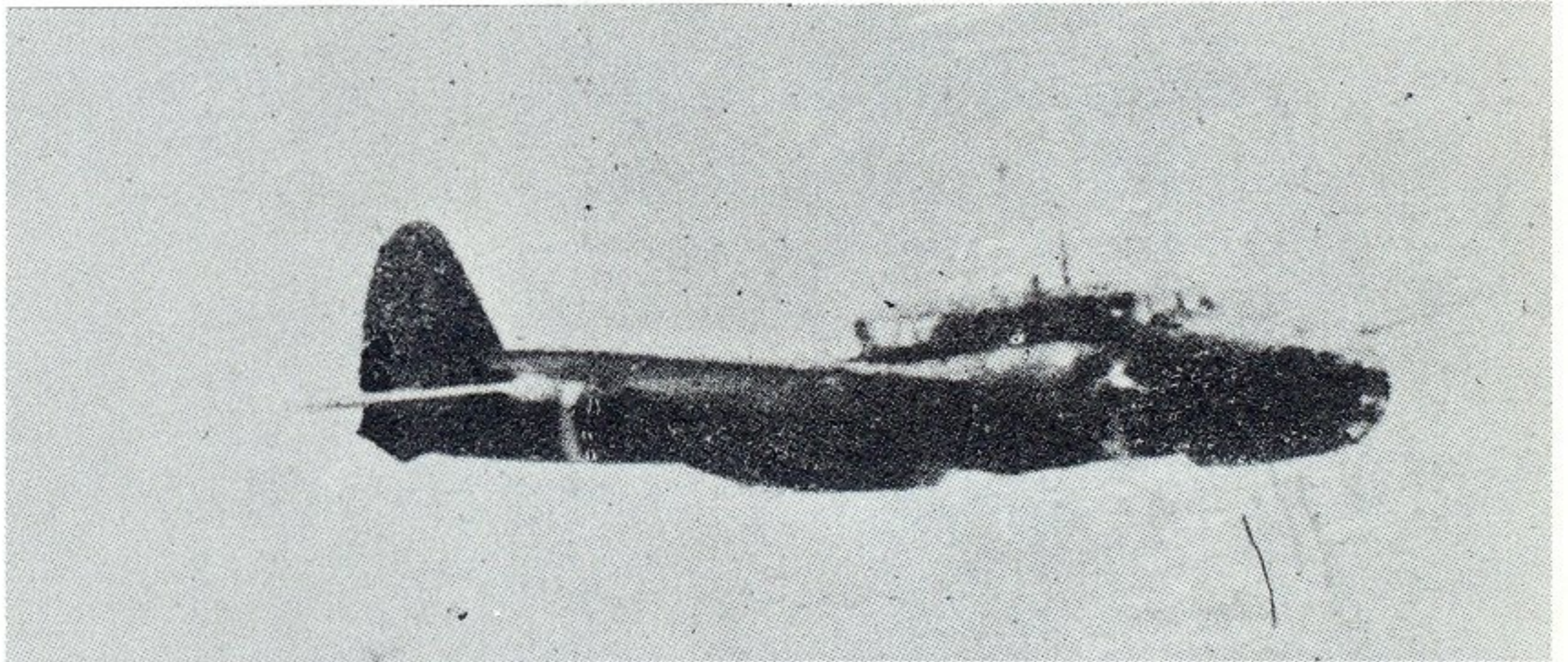
Below: The Ki.48-1b watched the ground movements in Burma as the limits of Japanese expansion were reached. (Asahigraph via Bueschel)



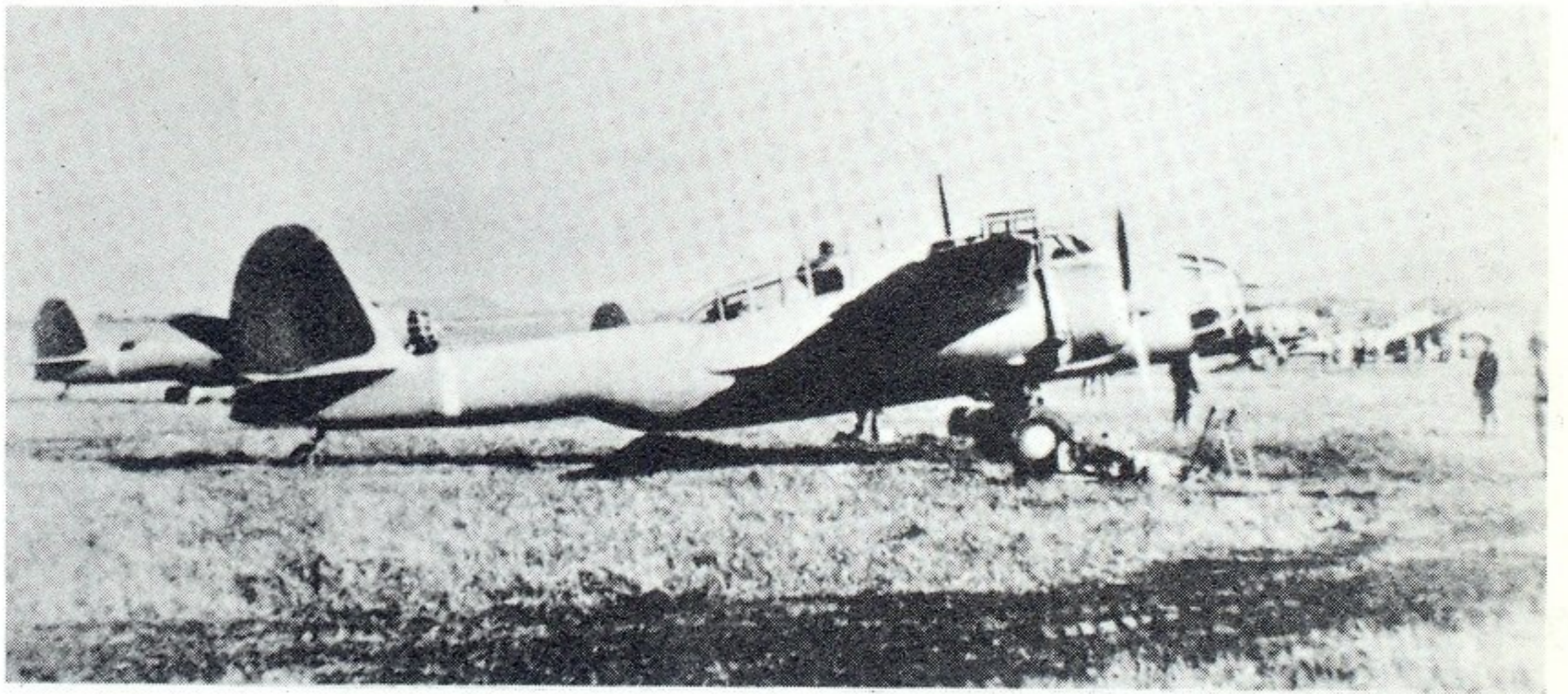
The 99 Sokei earned the Allied Code Name "Lily". (Umi to Sora via Bueschel)



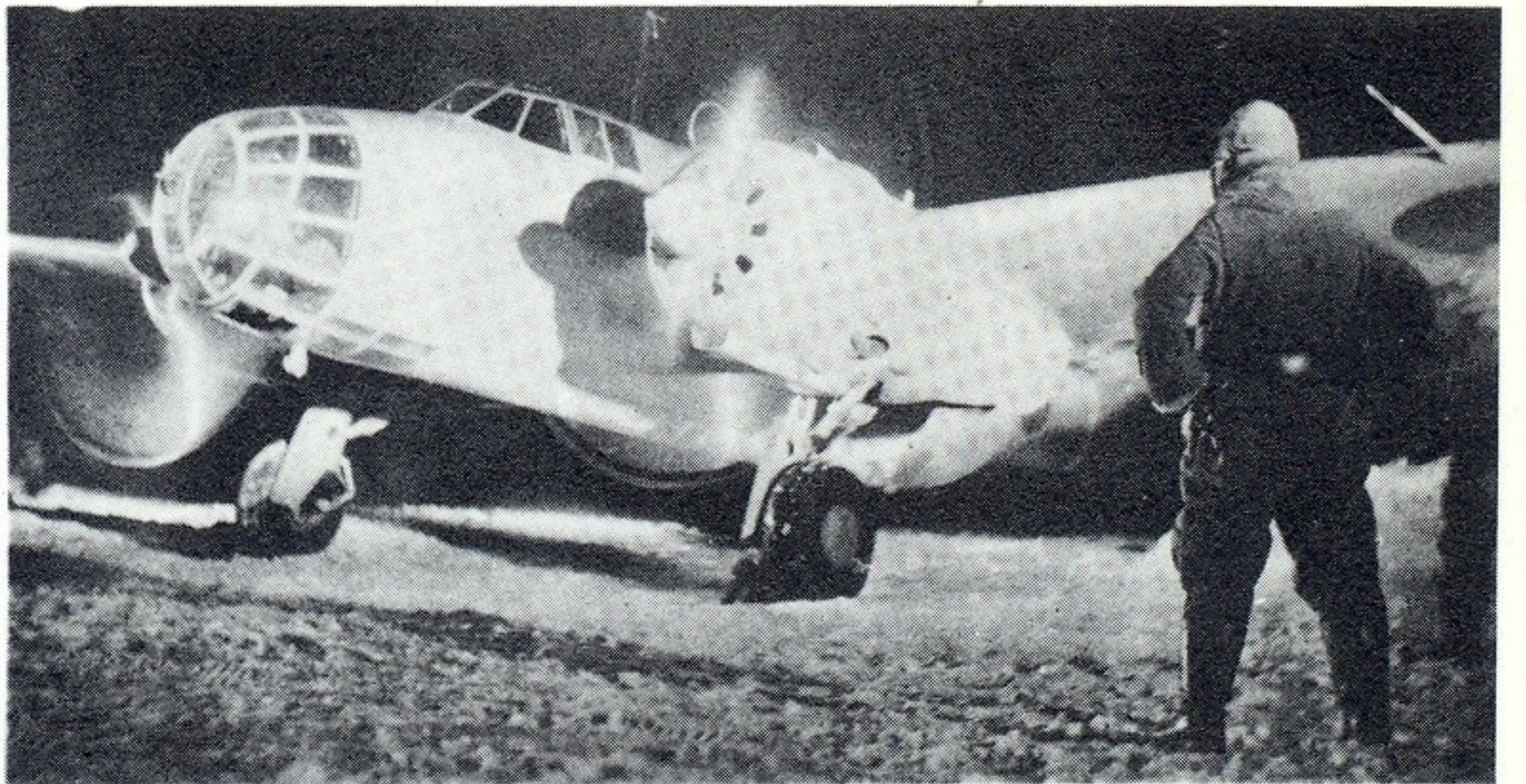
A "Lily" drops an unladylike bomb over China, April 1943. (Kokutisiki via Bueschel)



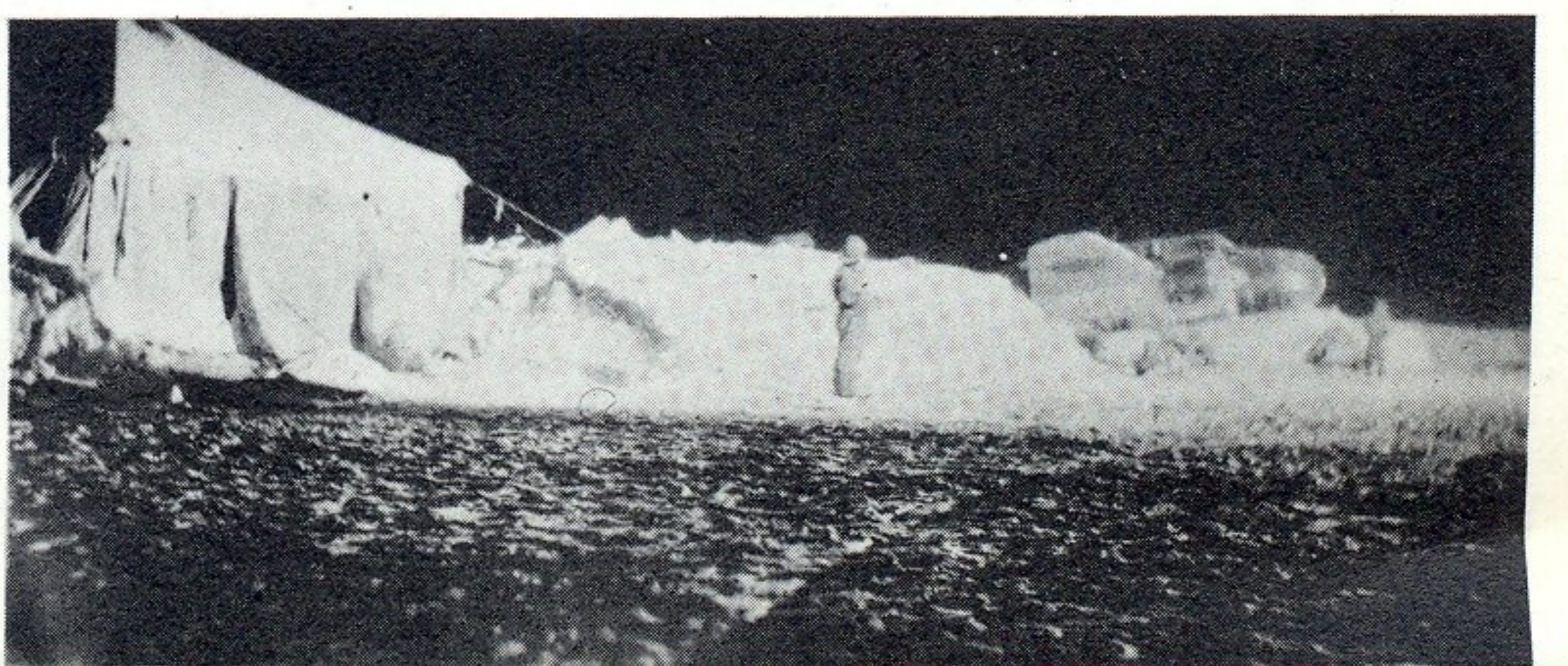
"Lily" unit in Japan, middle 1943. (Koku Fan via Bueschel)

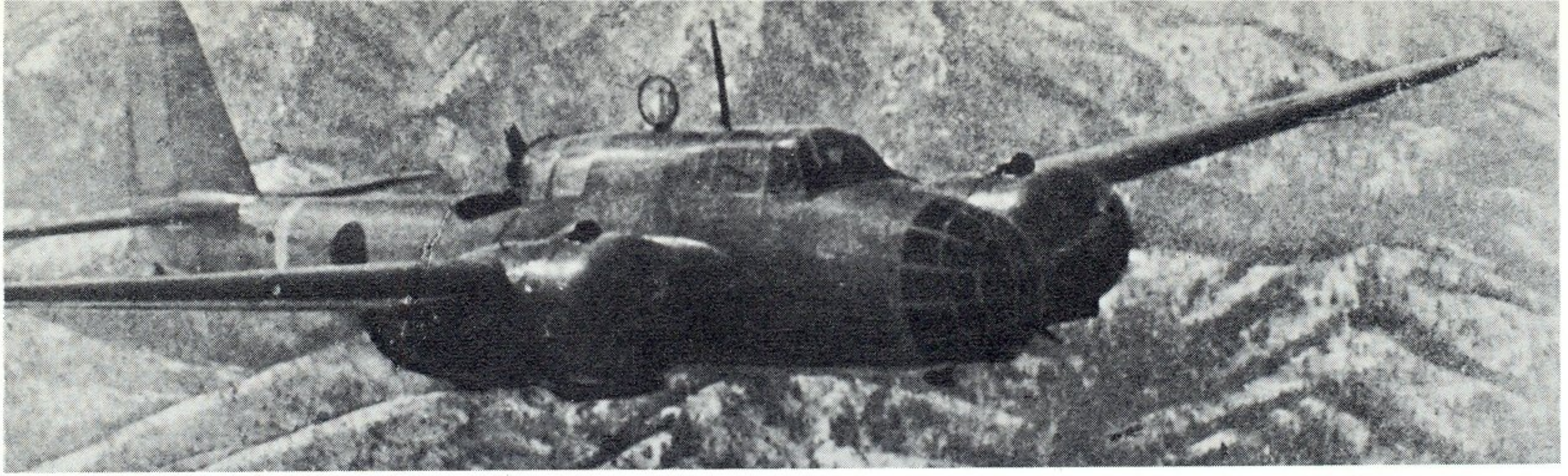


Special cold-weather cowlings were fitted to 99 Sokei bombers for use in the Army's Northern District. (Tohosya via Bueschel)



Army air operations at night, Karafuto. (Tohosya via Bueschel)



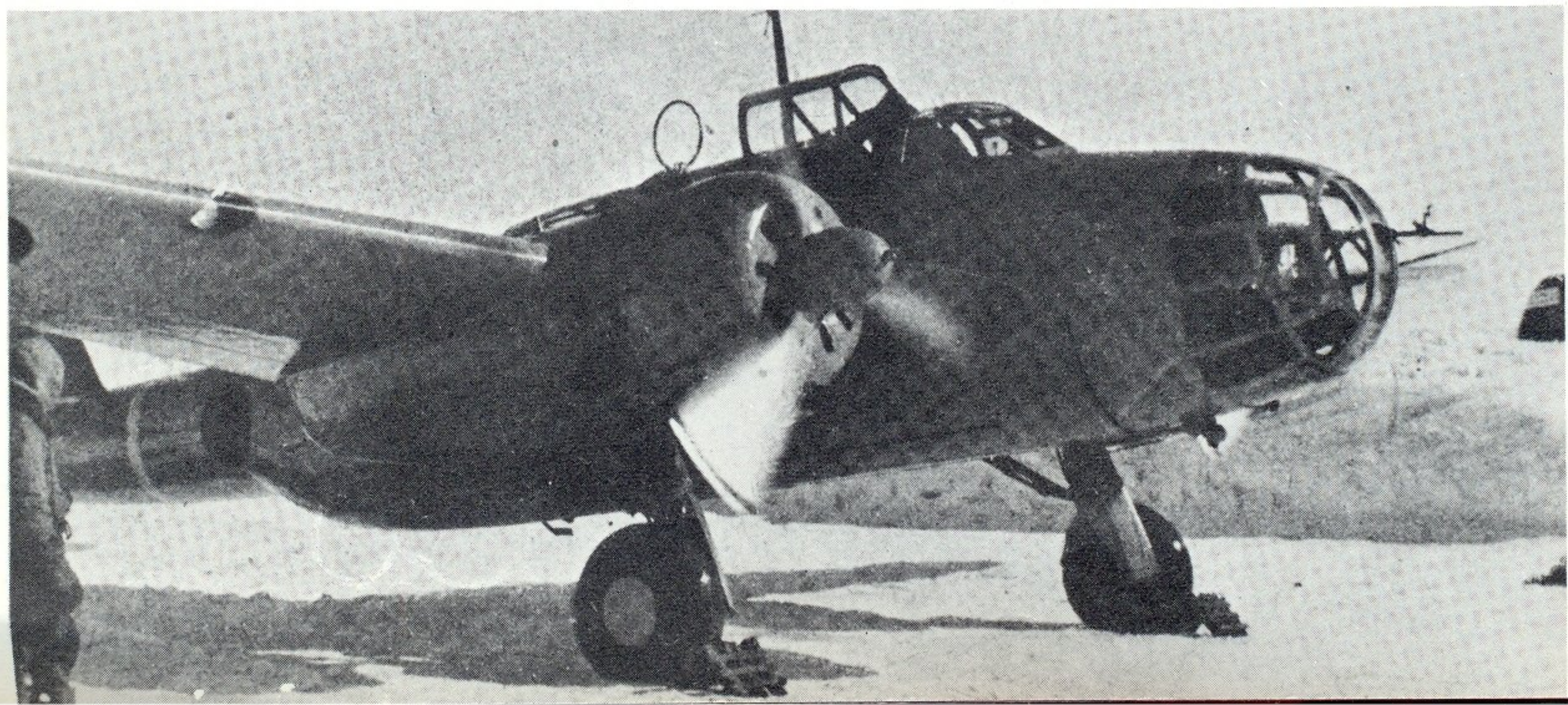


Above: In the air over the Kuriles. (Koku Asahi via Bueschel)



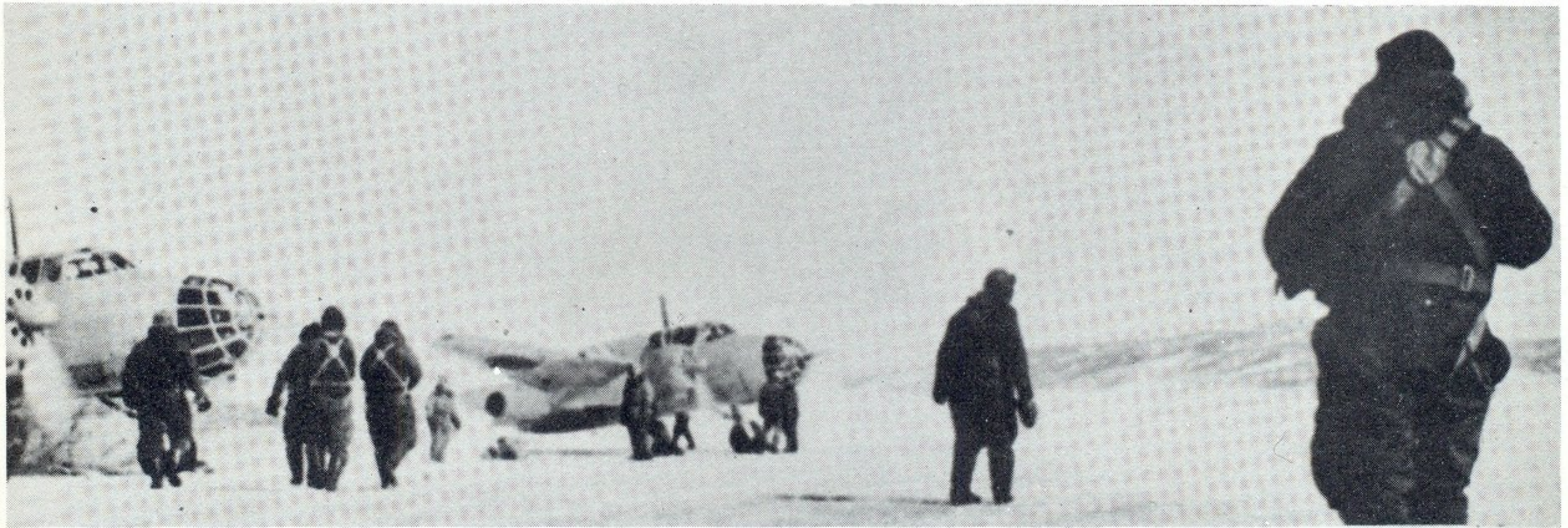
Above: Warming up in the cold. (Koku Asahi via Bueschel)

Below: Late 1941 production of Ki.48-IIb included small run mounting Water enclosed cowlings for cold-weather use. (Tohosya via Bueschel)



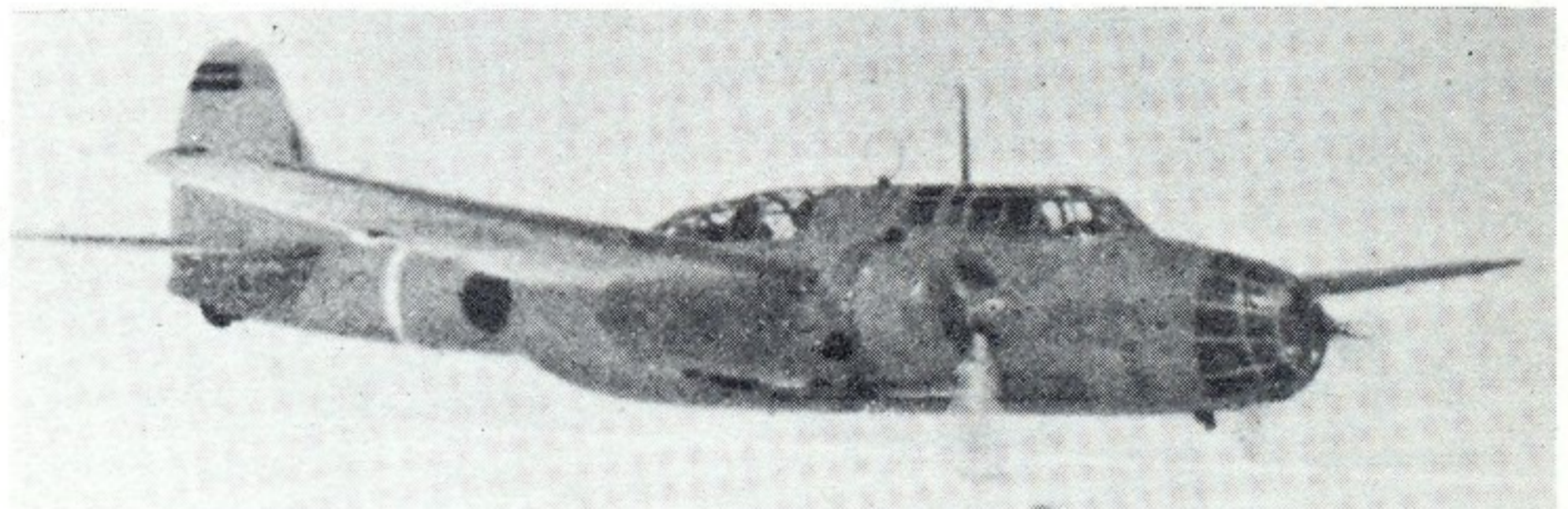


Above: On the ground at Karafuto. Briefing. (Tohosya via Bueschel)



Above: To the aircraft. (Tohosya via Bueschel)

Right: The 3rd regiment remained in the Kuriles until autumn 1944, when the unit was moved to the Philippines. (Koku Asahi via Bueschel)



Below: Warming up. (Tohosya via Bueschel)





Above: 3rd Attack regiment 99 Sokei over frozen tundra, January 1942. (Tohosya via Bueschel)



Right: 99 Sokei on patrol, Kurile Islands. (Tohosya via Bueschel)

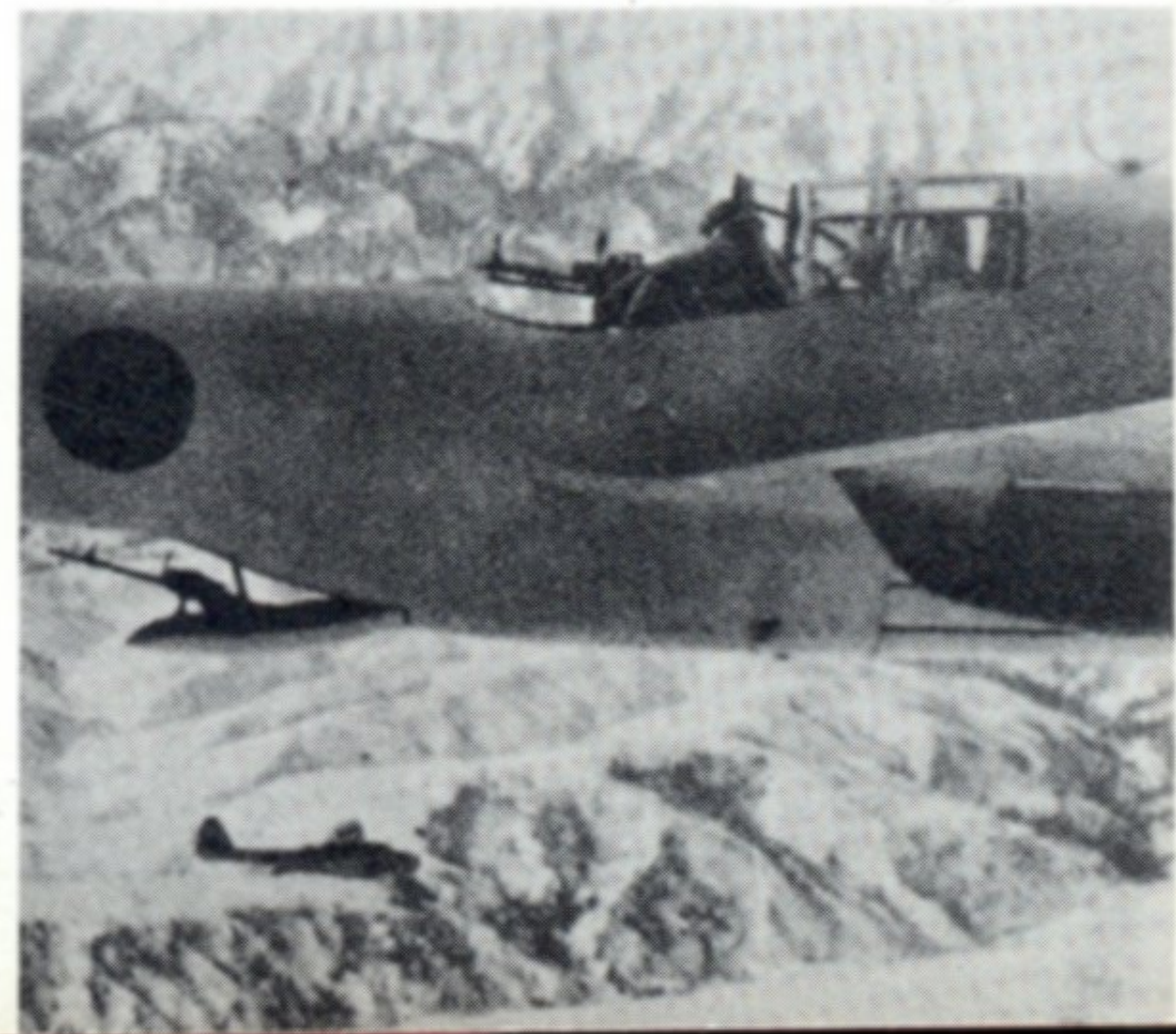
Below: Cold weather operations at Karafuto, January 1942. (Tohosya via Bueschel)

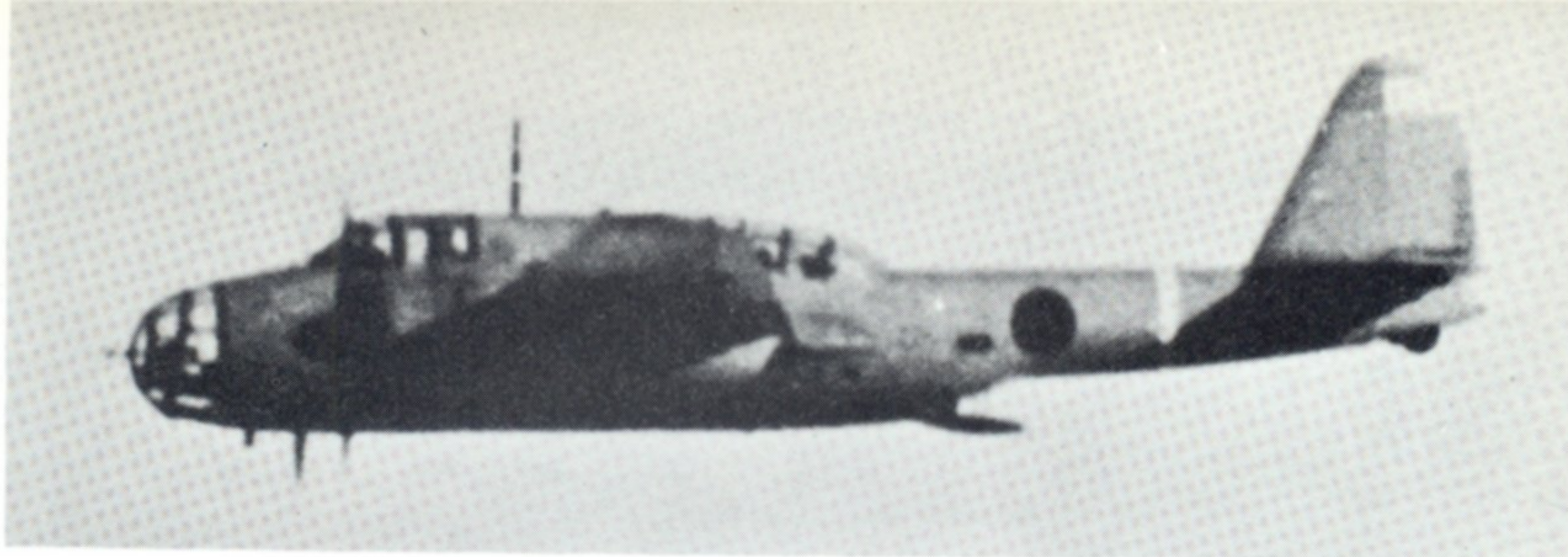


Above: 99 Sokei takes off in the snow. (Tohosya via Bueschel)

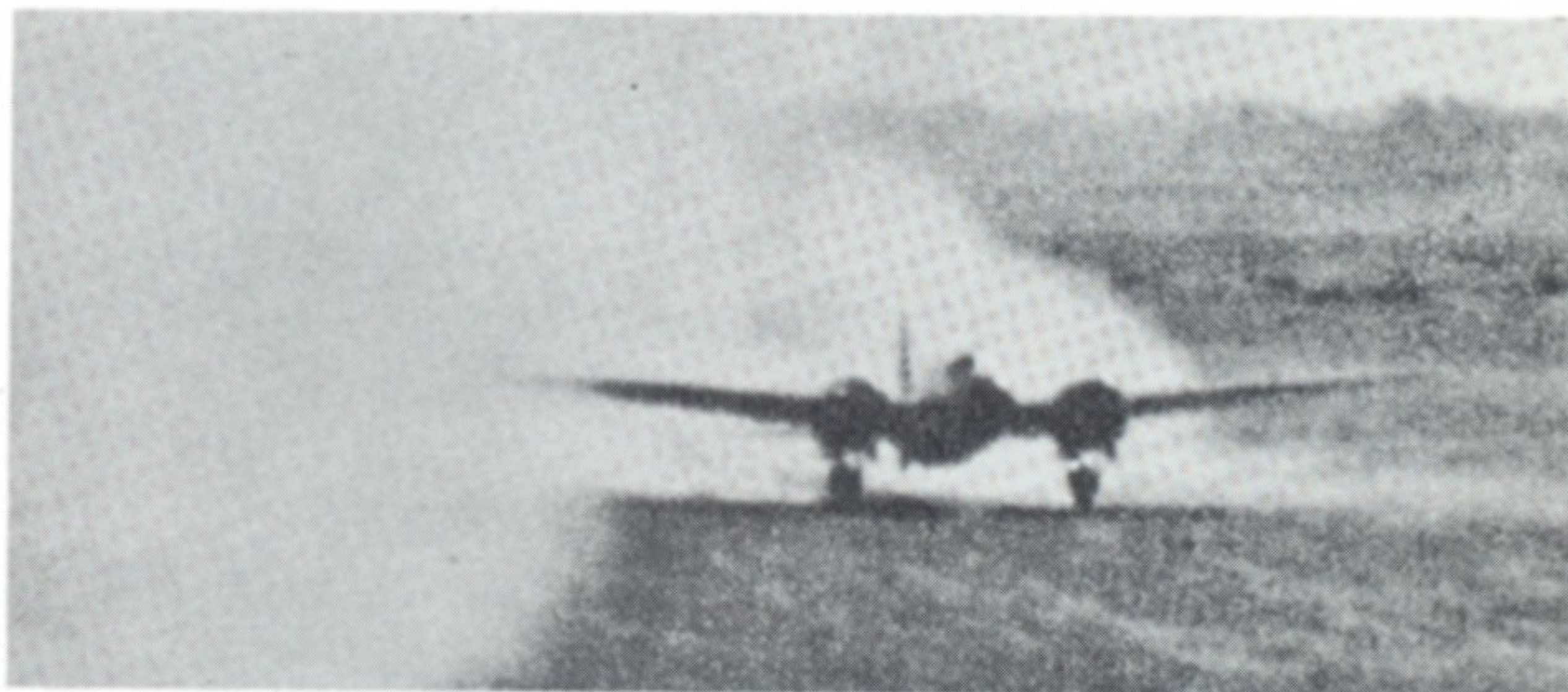
Below: Ground crewmen move about on skis at the Japanese Army's northernmost air base in the Kuriles. (Tohosya via Bueschel)

Below: 3rd Attack regiment "Lily" shows both dorsal and ventral gun positions. (Tohosya via Bueschel)

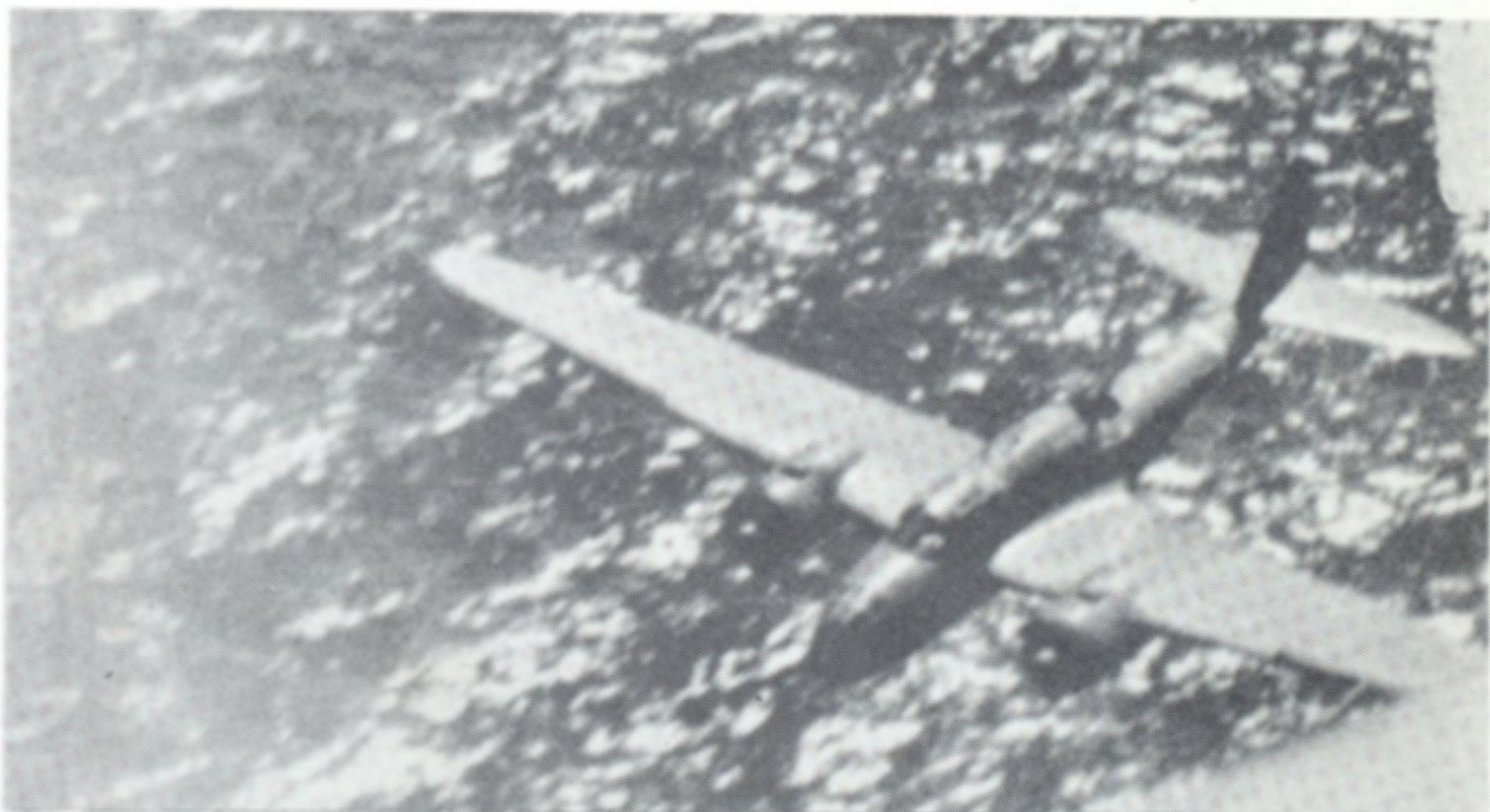




Above: Patrol over the Kuriles, ventral position open. (Mannosuke Toda via Bueschel)



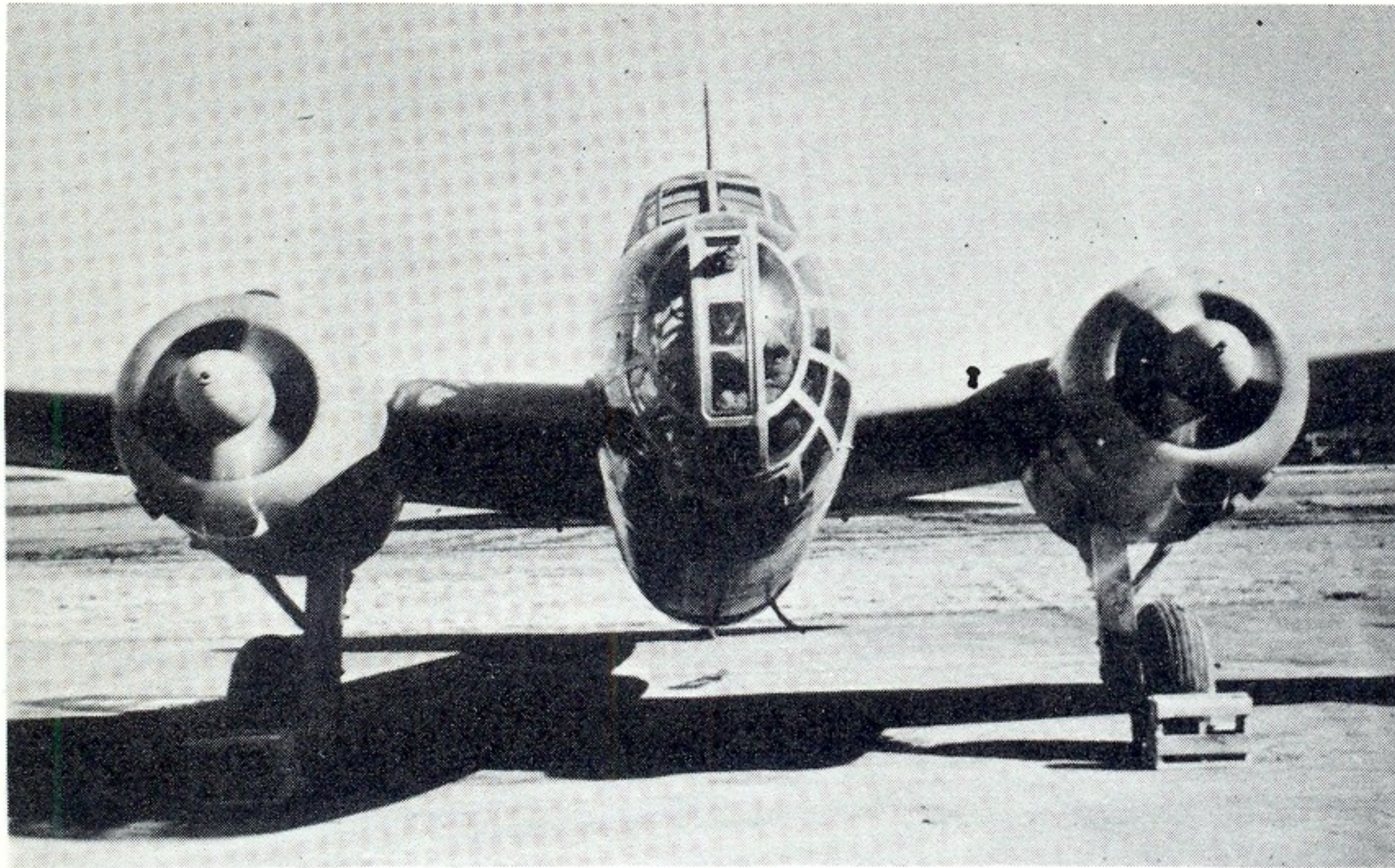
Right: Further environmental problems! The 208th Light Bomber regiment finds its maintenance problems are increased tenfold by the grinding ground dust of Manchoukuo. (Sekai No Tsubasa via Bueschel)



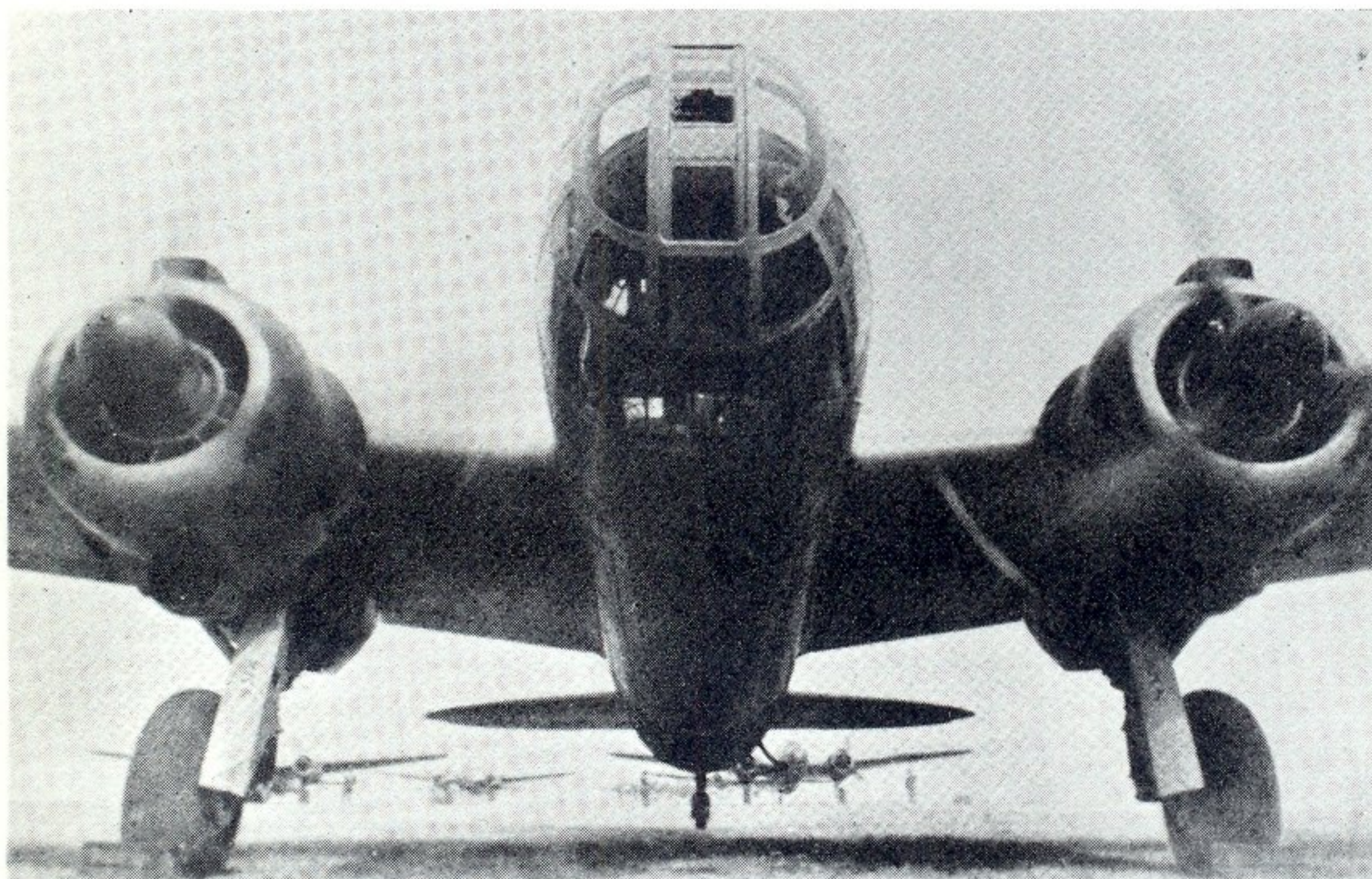
Flying hundreds of miles over water to reinforce Rabaul and New Guinea, about six per cent of the Army aircraft were lost due to poor navigation and flying accidents. (Koku Asahi via Bueschel)



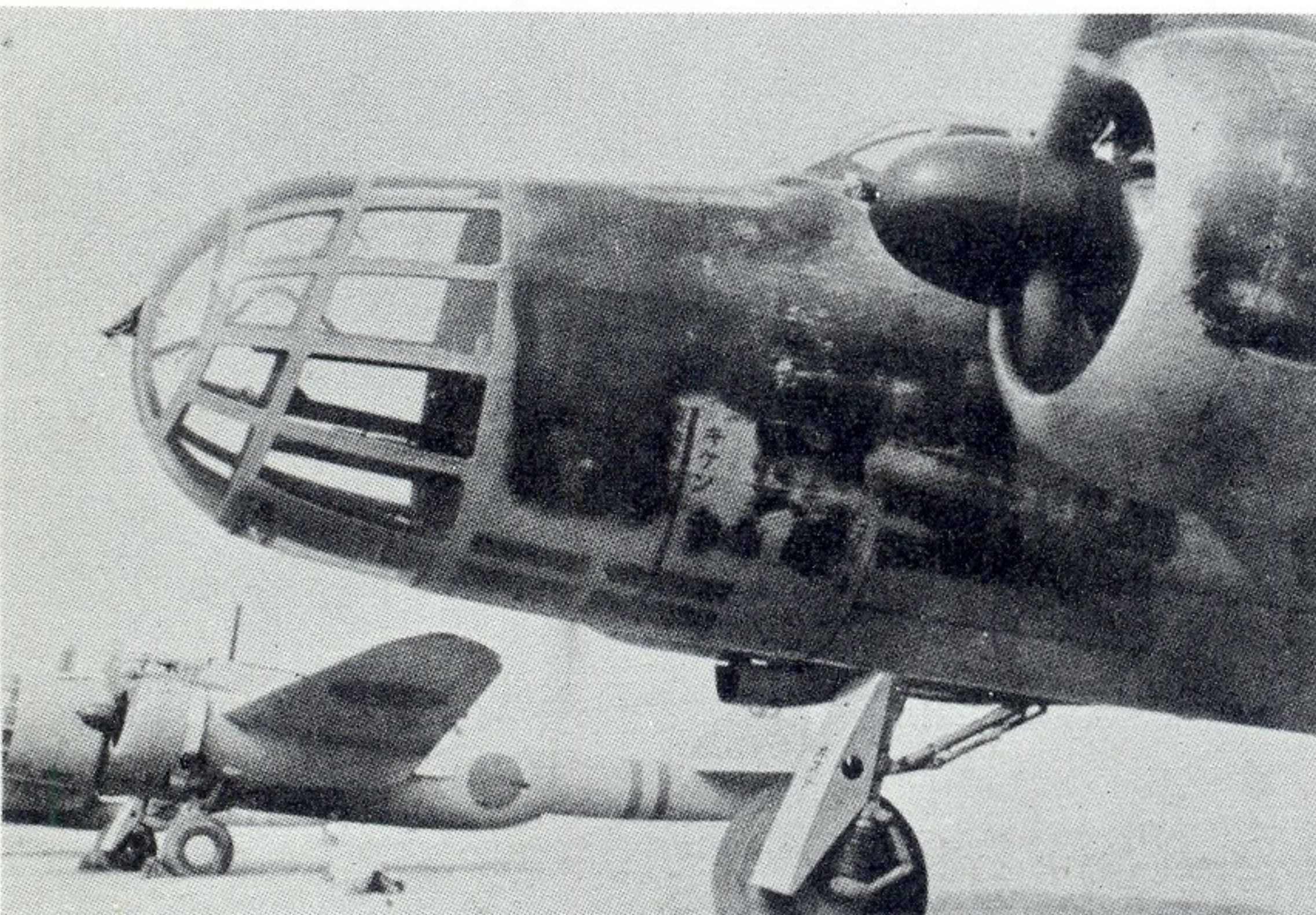
"Lily" training and new unit formations were intensified for New Guinea. Photo shows final training at Hokota in summer 1943. (Kokutisiki via Bueschel)



1,000 h.p. Nakajima Ha.25 power plants of Ki.48-I model had small scoop on top, large intake at bottom of cowling. (Hideya Ando via Bueschel)



1,130 h.p. Nakajima Ha.115 of later Ki.48-II reversed this, with large scoop at top, small intake at bottom of cowling. (Koku Shonen via Bueschel)



The Ki.48-IIa added armour, fuel tank protection, bomb load and power to a lengthened 99 Sokei air frame. (Sora via Bueschel)



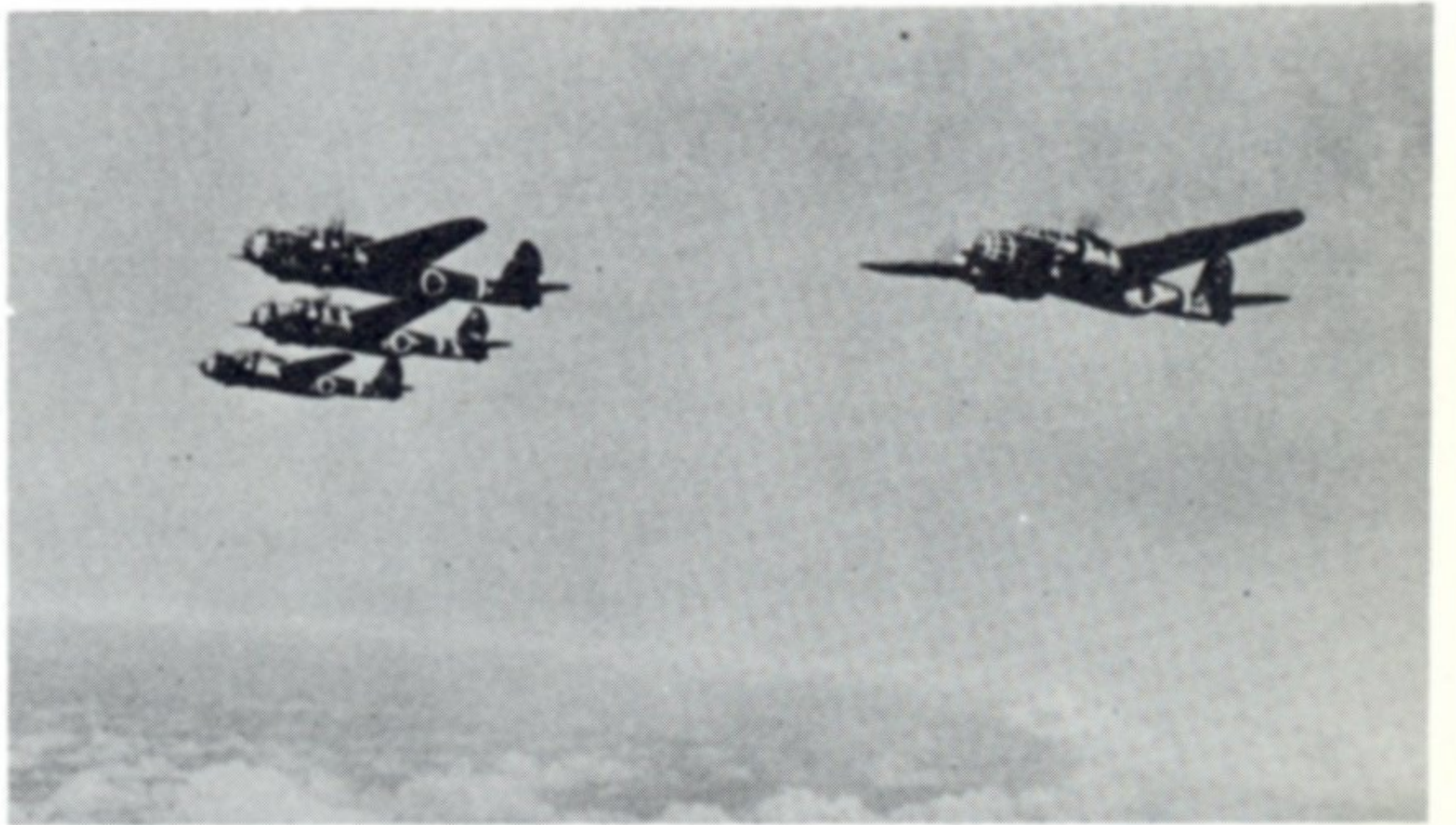
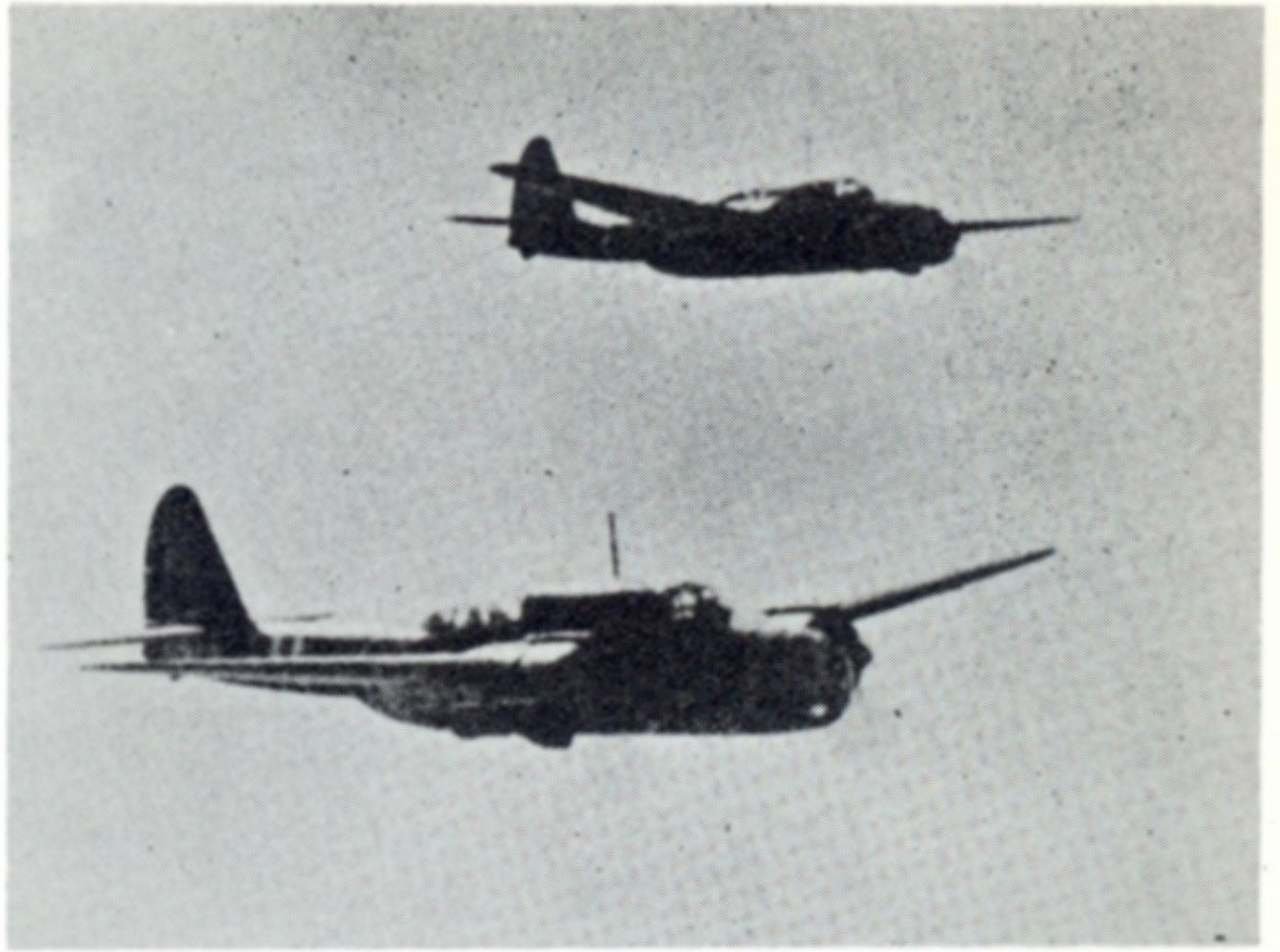
Above left: The Model 2 99 Sokei enters service, and maintenance training begins at Tokorozawa. (Shashin Shuho via Bueschel)

Above right: The improved Ki.48-IIa entered production in April 1942. (Kokutisiki via Bueschel)

Right: Most units began to receive Model 2 replacements by late 1942 and early 1943. (Mannosuke Toda via Bueschel)

Below left: Crawling into the 99 Sokei from the aluminium ladder. (Tohosya via Bueschel)

Below right: By August 1943, "Lily 2" Ki.48-II light bombers were on their way to Wewak, New Guinea. (Shashin Shuho via Beuschel)



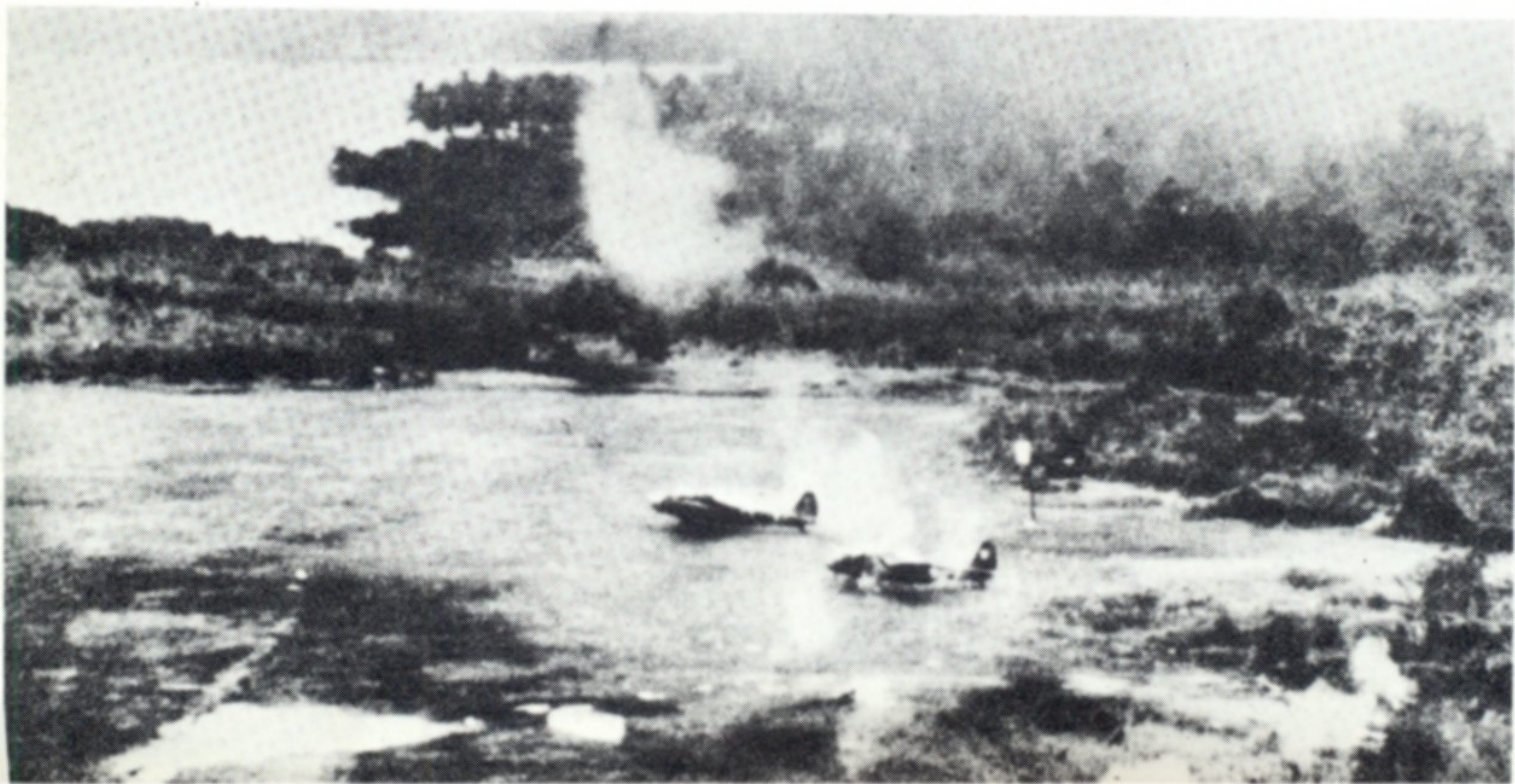


Above: "Lily 2" bombers under attack by Para-Frag bombs at But Airfield, Wewak area, mid-August 1943. (USAAF via Bueschel)



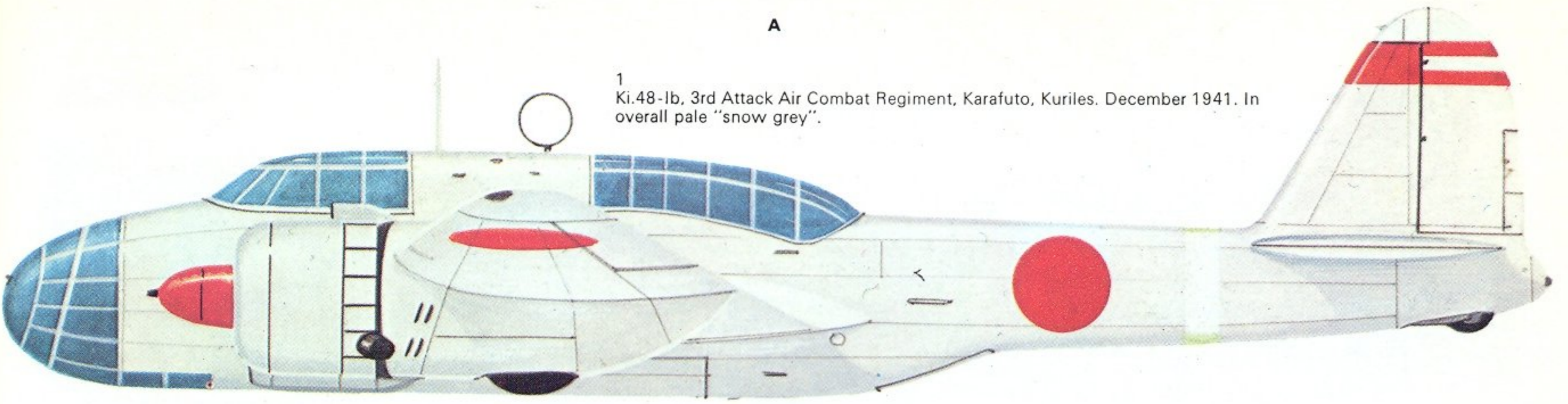
Above: Conditions in New Guinea were primitive and trying, with no major maintenance available. (Shashin Shuho via Bueschel)

Below: Allied air attacks destroyed the JAAF on the ground in New Guinea. (USAF via Bueschel)

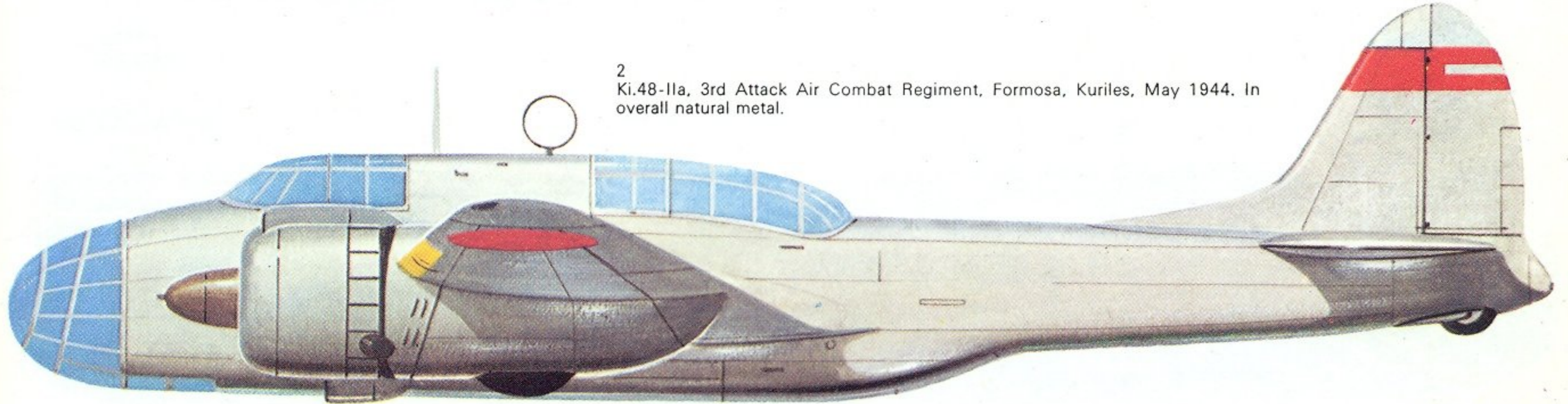


A

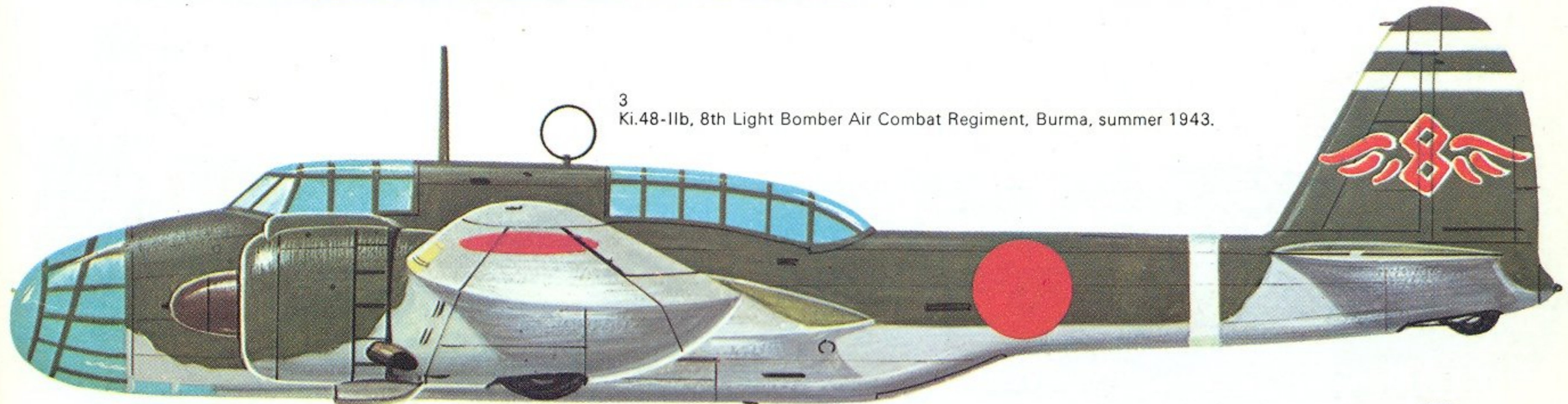
1
Ki.48-Ib, 3rd Attack Air Combat Regiment, Karafuto, Kuriles. December 1941. In overall pale "snow grey".



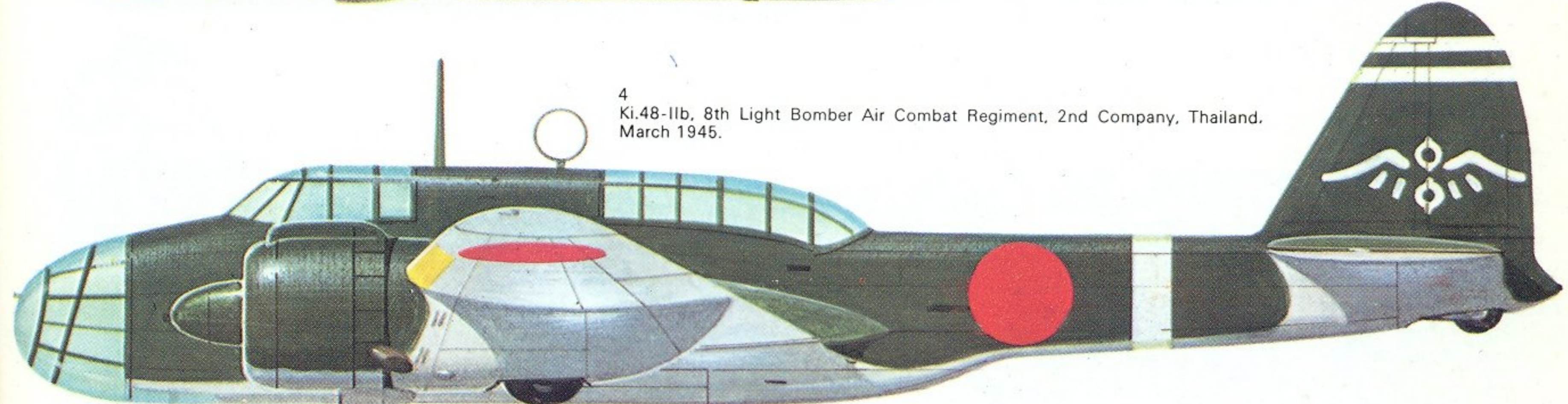
2
Ki.48-IIa, 3rd Attack Air Combat Regiment, Formosa, Kuriles, May 1944. In overall natural metal.



3
Ki.48-IIb, 8th Light Bomber Air Combat Regiment, Burma, summer 1943.



4
Ki.48-IIb, 8th Light Bomber Air Combat Regiment, 2nd Company, Thailand. March 1945.

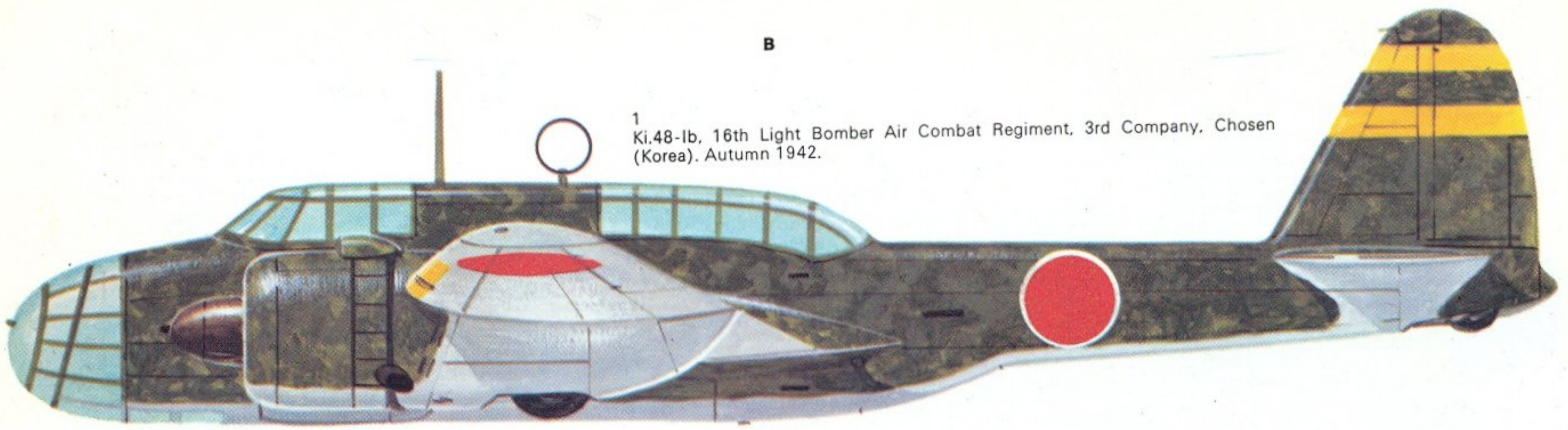


5
Ki.48-IIb, 8th Light Bomber Air Combat Regiment, 3rd Company, Thailand. March 1945.

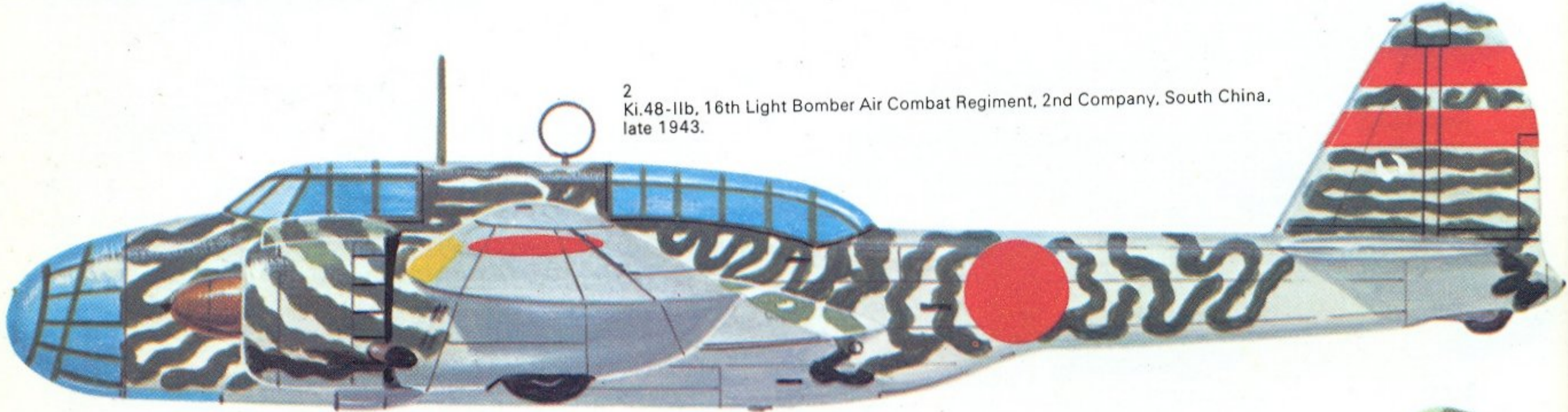


B

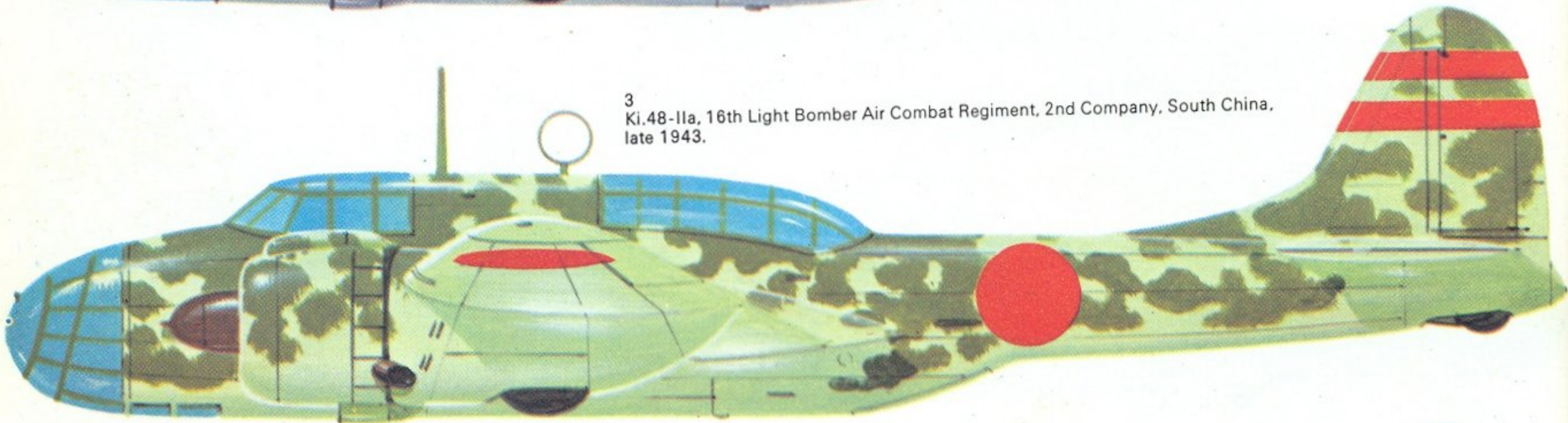
1
Ki.48-Ib, 16th Light Bomber Air Combat Regiment, 3rd Company, Chosen
(Korea). Autumn 1942.



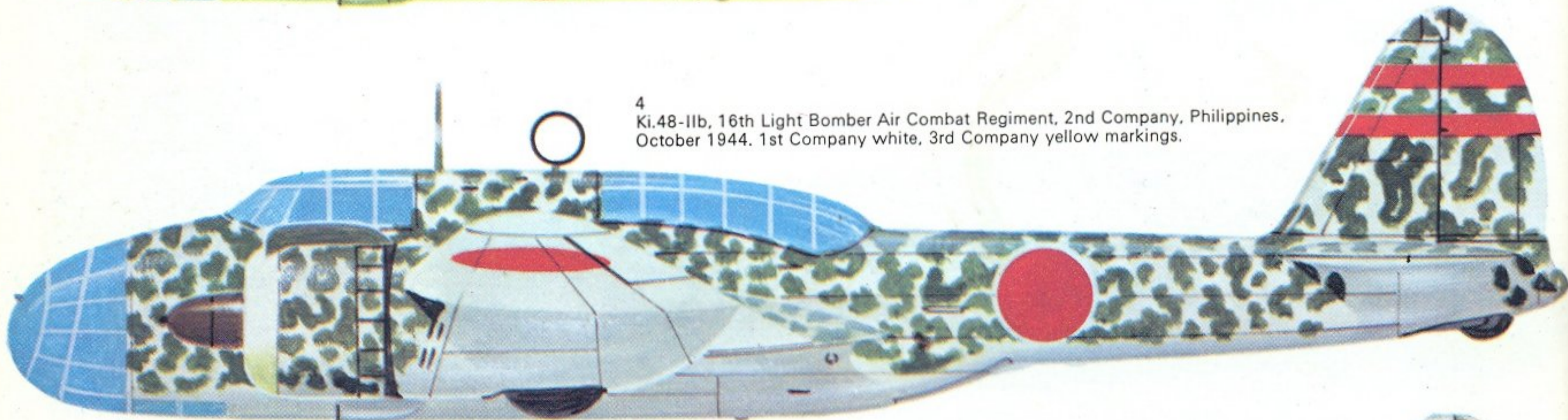
2
Ki.48-IIb, 16th Light Bomber Air Combat Regiment, 2nd Company, South China,
late 1943.



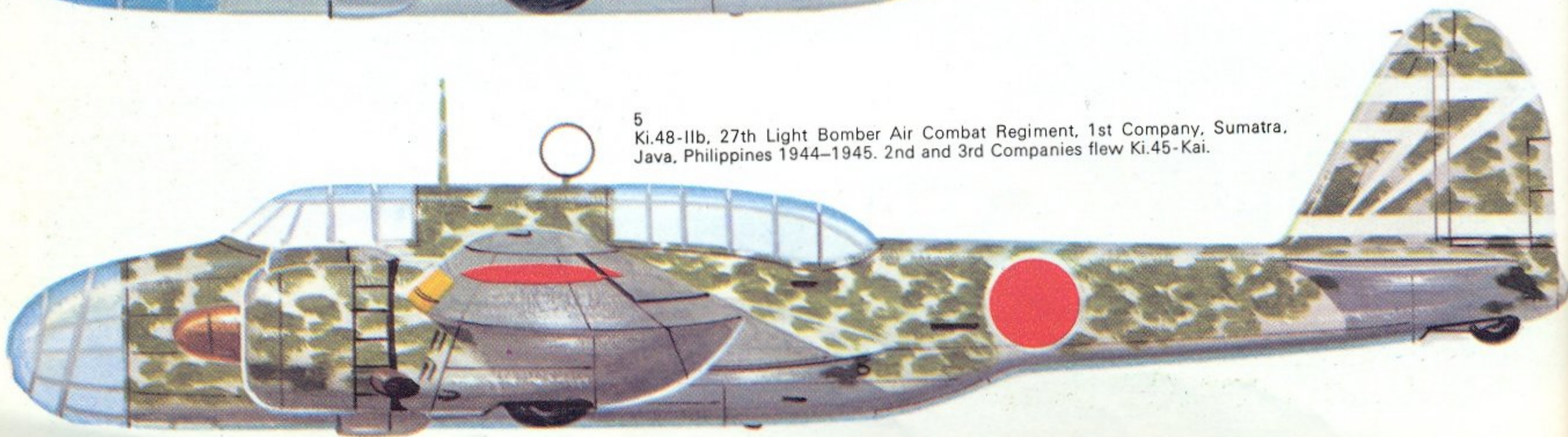
3
Ki.48-IIa, 16th Light Bomber Air Combat Regiment, 2nd Company, South China,
late 1943.



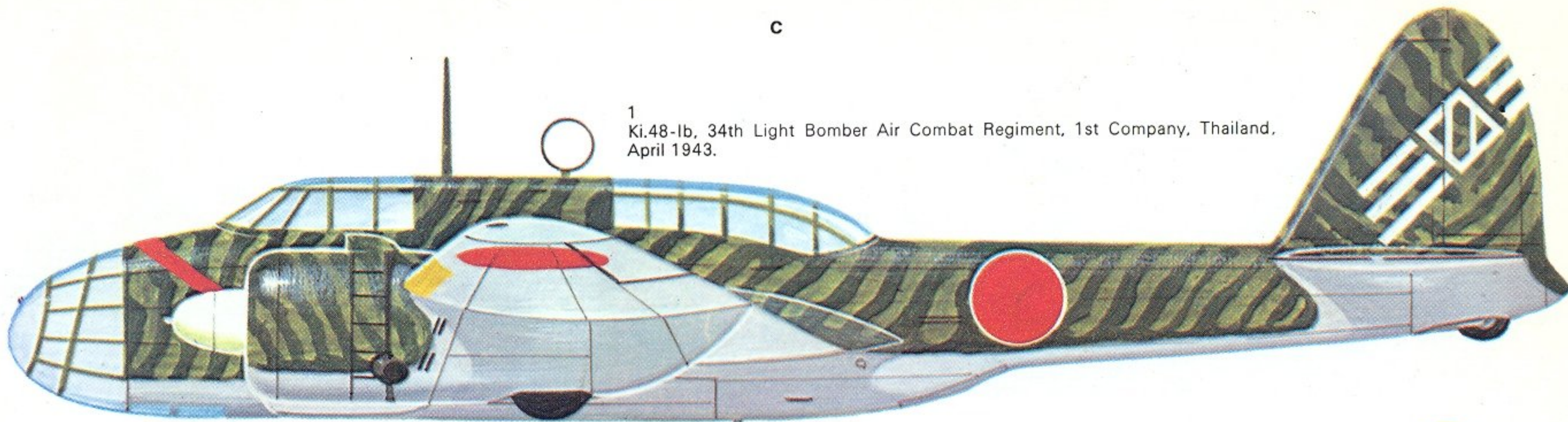
4
Ki.48-IIb, 16th Light Bomber Air Combat Regiment, 2nd Company, Philippines,
October 1944. 1st Company white, 3rd Company yellow markings.



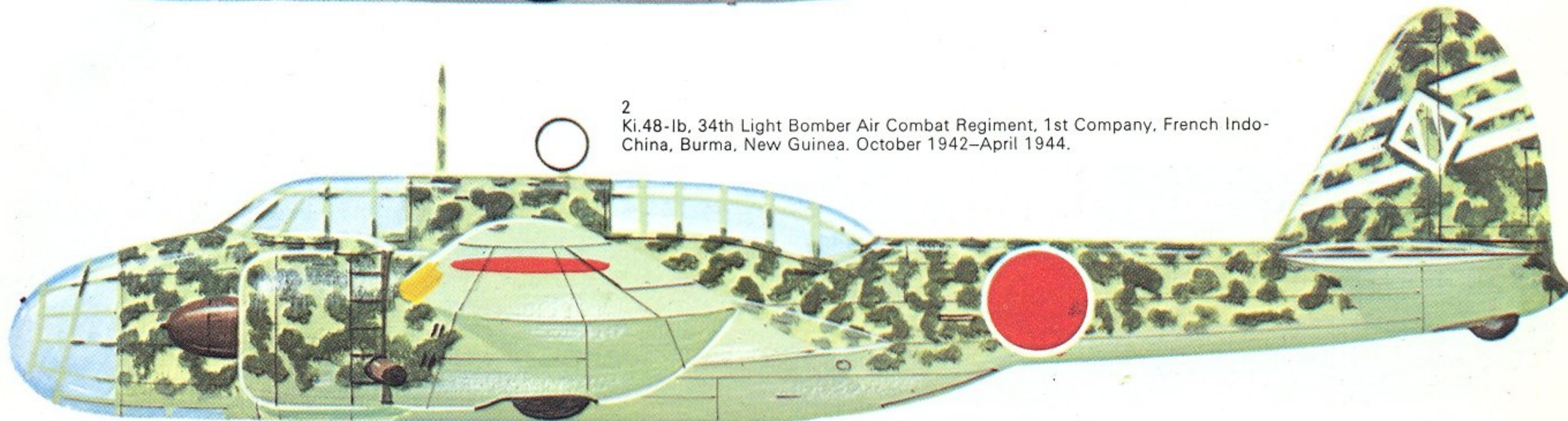
5
Ki.48-IIb, 27th Light Bomber Air Combat Regiment, 1st Company, Sumatra,
Java, Philippines 1944-1945. 2nd and 3rd Companies flew Ki.45-Kai.



1
Ki.48-Ib, 34th Light Bomber Air Combat Regiment, 1st Company, Thailand,
April 1943.



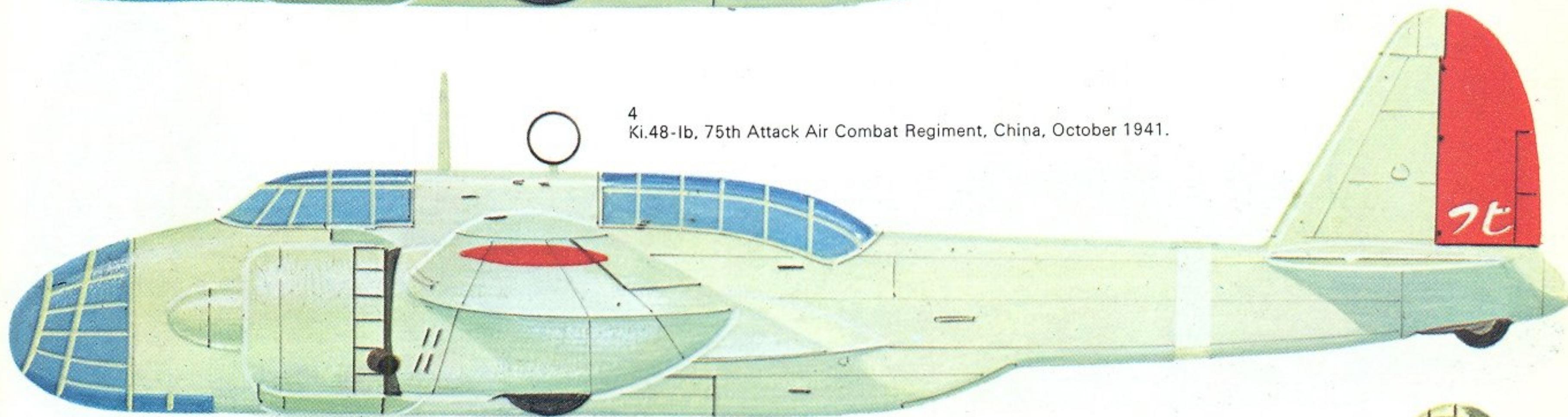
2
Ki.48-Ib, 34th Light Bomber Air Combat Regiment, 1st Company, French Indo-
China, Burma, New Guinea. October 1942–April 1944.



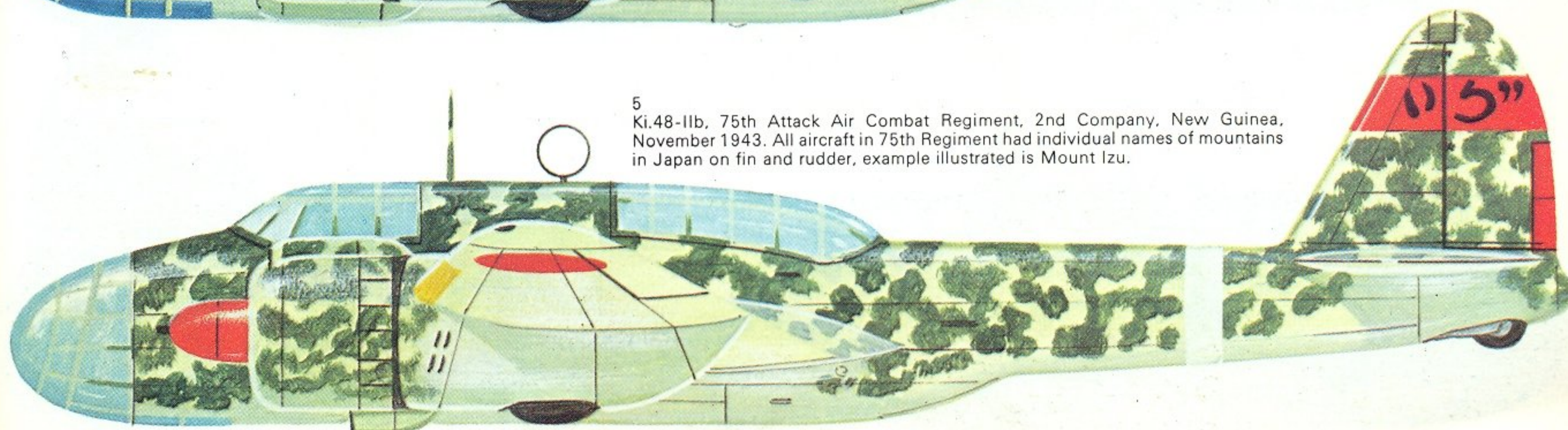
3
Ki.48-Ib, 34th Light Bomber Air Combat Regiment, 2nd Company, French Indo-
China, Burma, New Guinea. October 1942–April 1944.



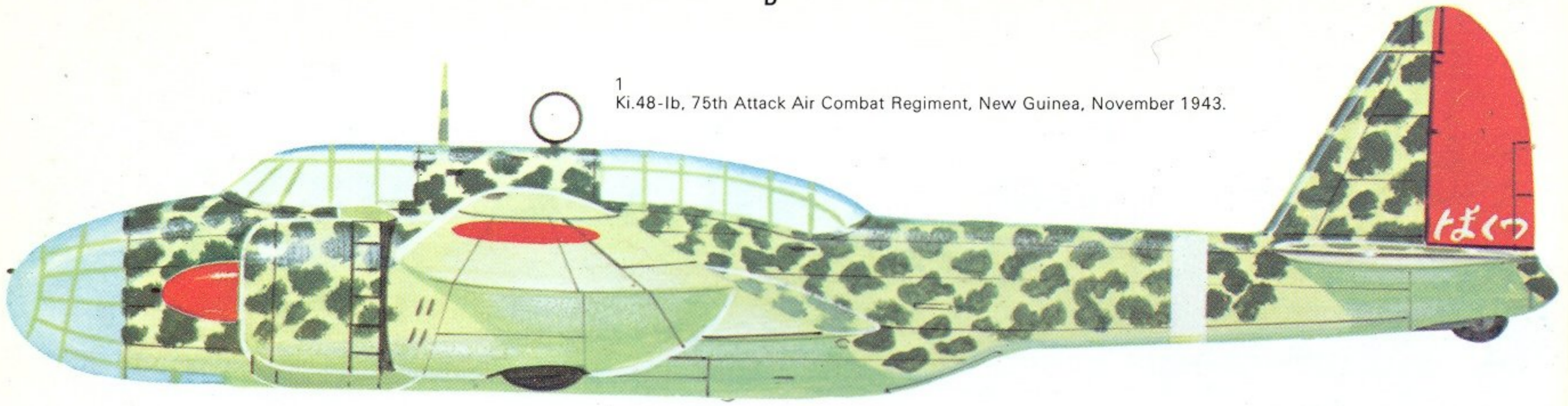
4
Ki.48-Ib, 75th Attack Air Combat Regiment, China, October 1941.



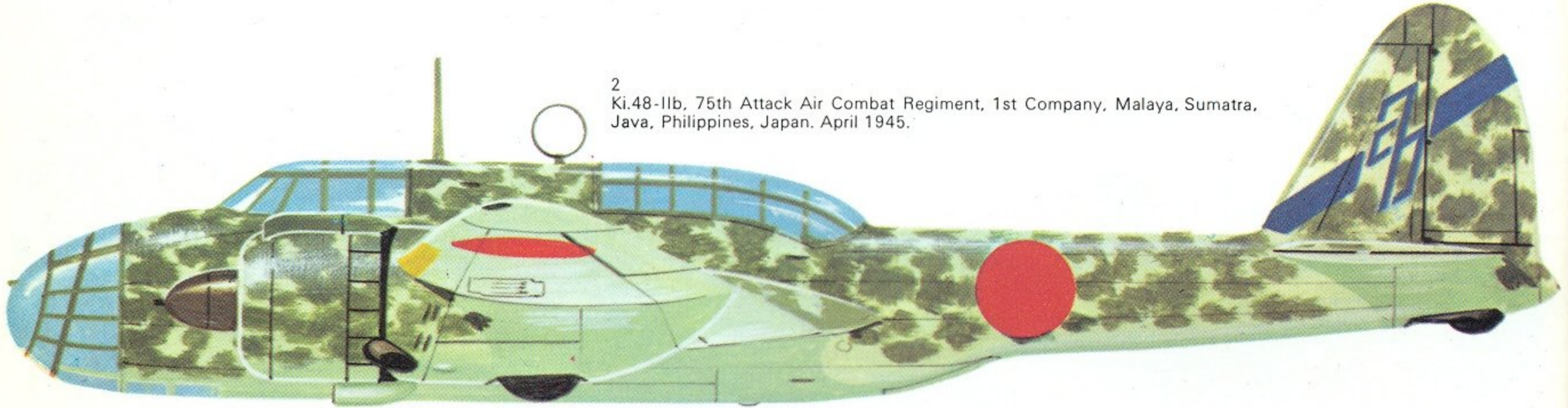
5
Ki.48-IIb, 75th Attack Air Combat Regiment, 2nd Company, New Guinea,
November 1943. All aircraft in 75th Regiment had individual names of mountains
in Japan on fin and rudder, example illustrated is Mount Izu.



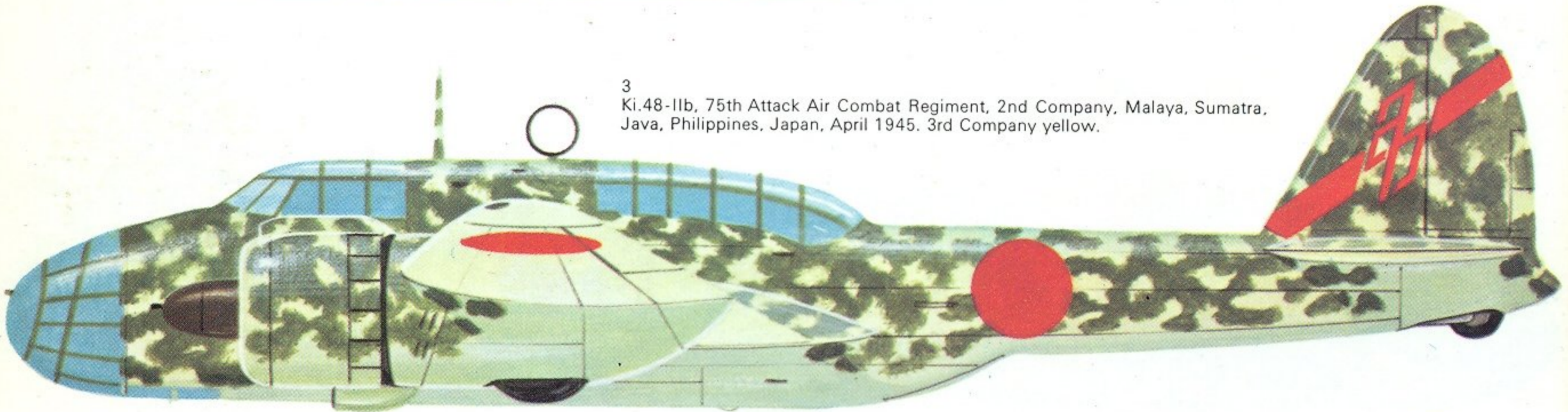
1
Ki.48-Ib, 75th Attack Air Combat Regiment, New Guinea, November 1943.



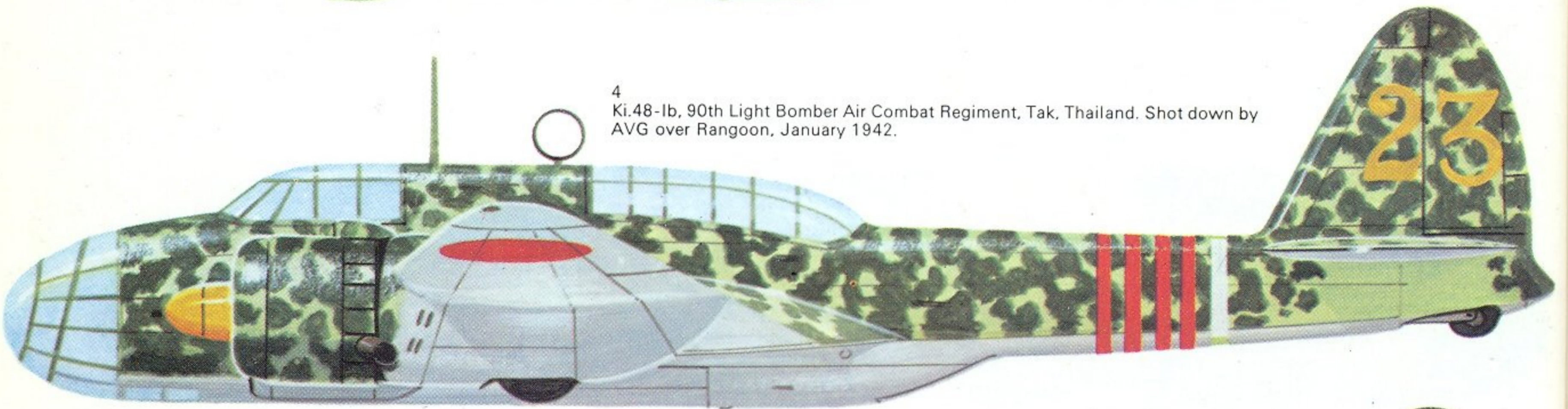
2
Ki.48-IIb, 75th Attack Air Combat Regiment, 1st Company, Malaya, Sumatra, Java, Philippines, Japan. April 1945.



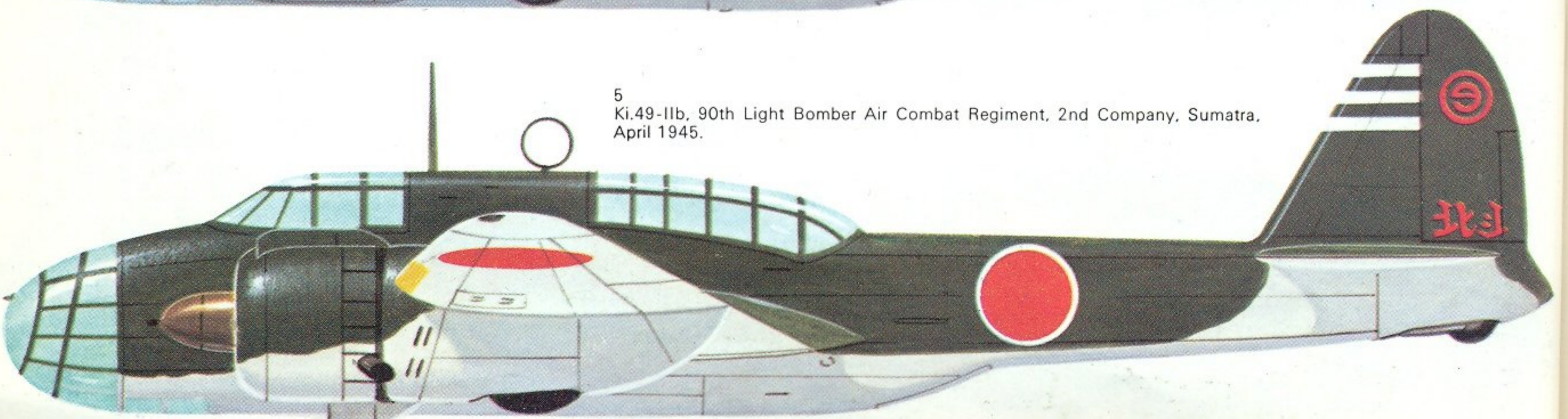
3
Ki.48-IIb, 75th Attack Air Combat Regiment, 2nd Company, Malaya, Sumatra, Java, Philippines, Japan, April 1945. 3rd Company yellow.



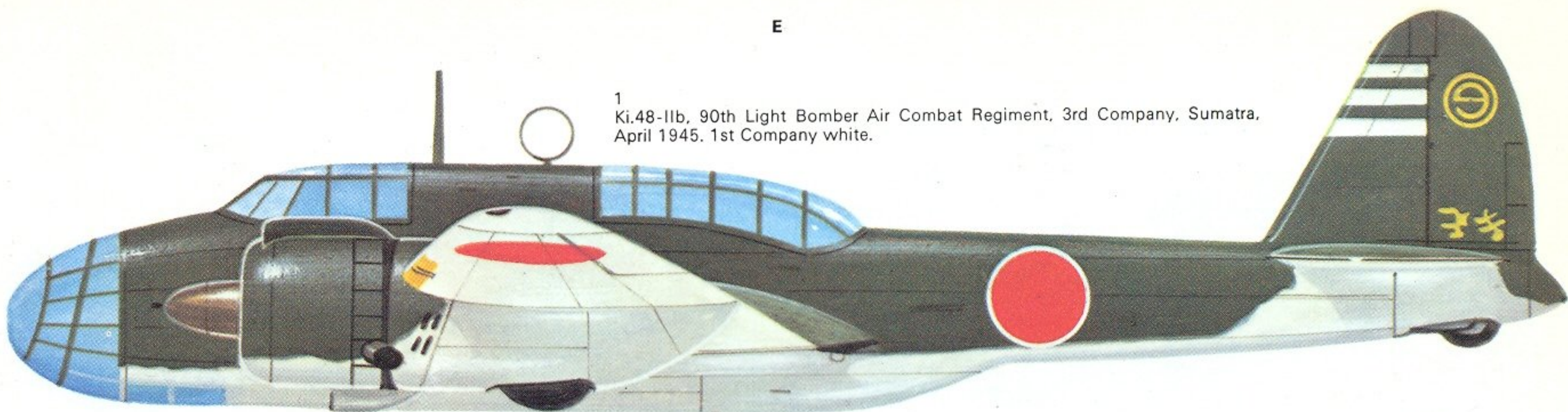
4
Ki.48-Ib, 90th Light Bomber Air Combat Regiment, Tak, Thailand. Shot down by AVG over Rangoon, January 1942.



5
Ki.49-IIb, 90th Light Bomber Air Combat Regiment, 2nd Company, Sumatra, April 1945.



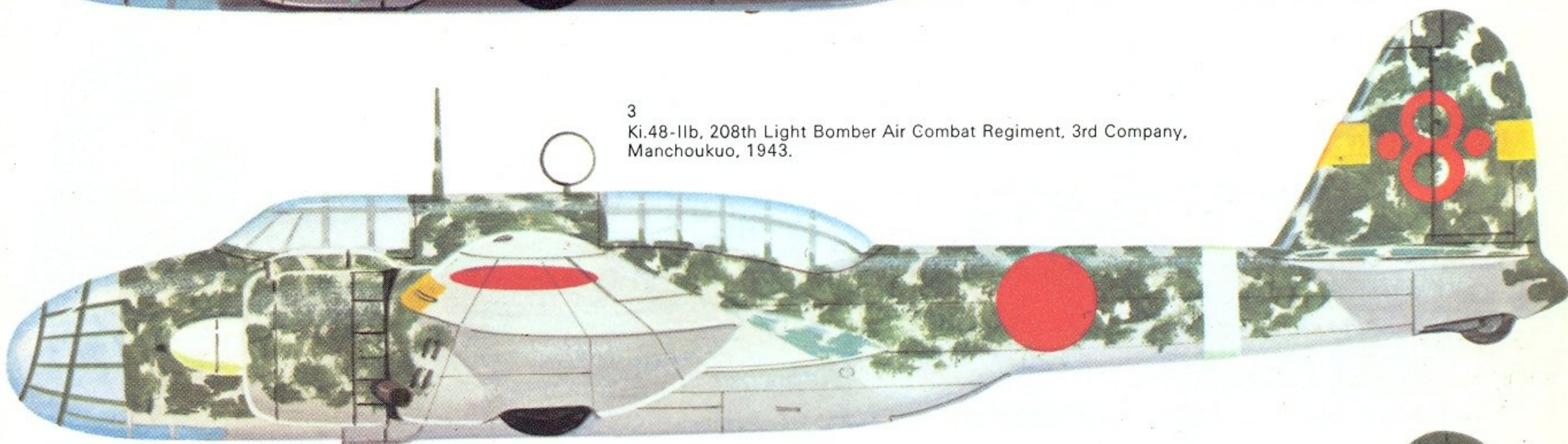
1
Ki.48-IIb, 90th Light Bomber Air Combat Regiment, 3rd Company, Sumatra,
April 1945. 1st Company white.



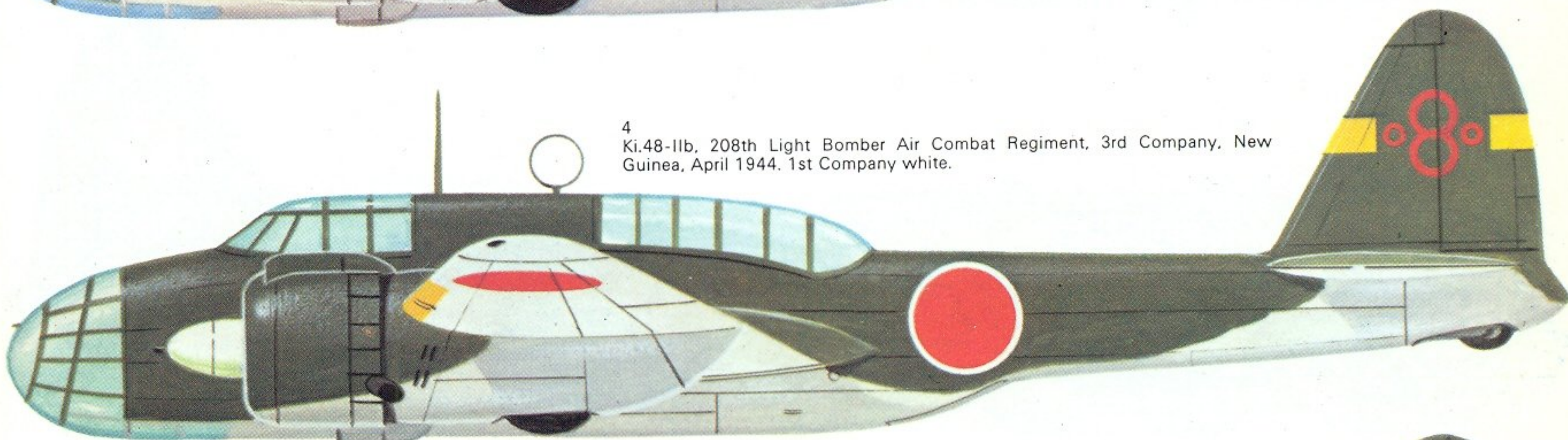
2
Ki.48-Ib, 208th Light Bomber Air Combat Regiment, 2nd Company,
Manchoukuo 1943.



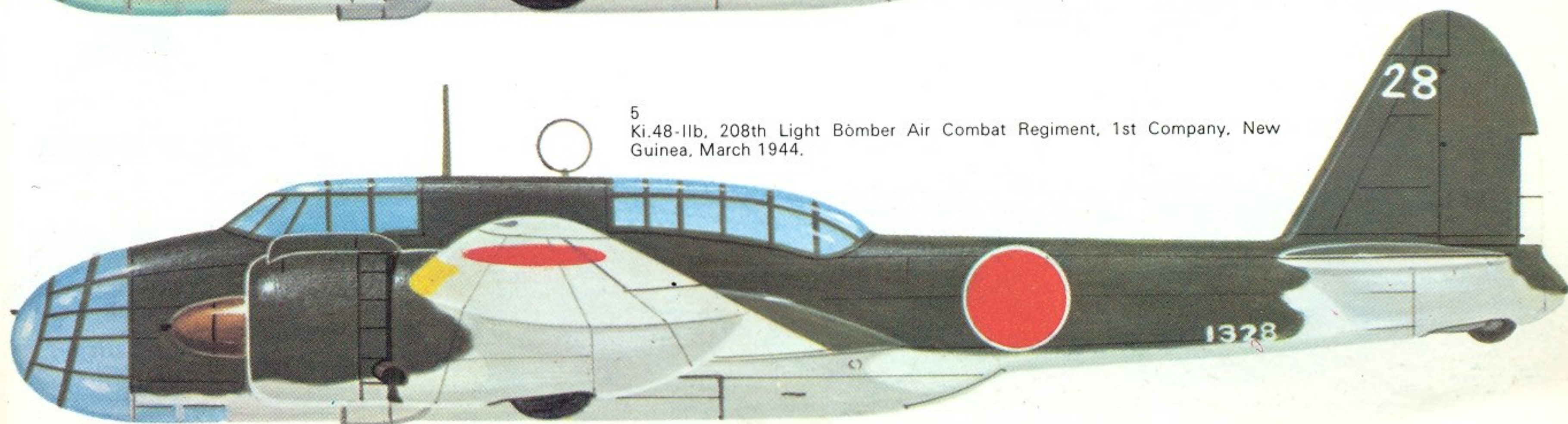
3
Ki.48-IIb, 208th Light Bomber Air Combat Regiment, 3rd Company,
Manchoukuo, 1943.



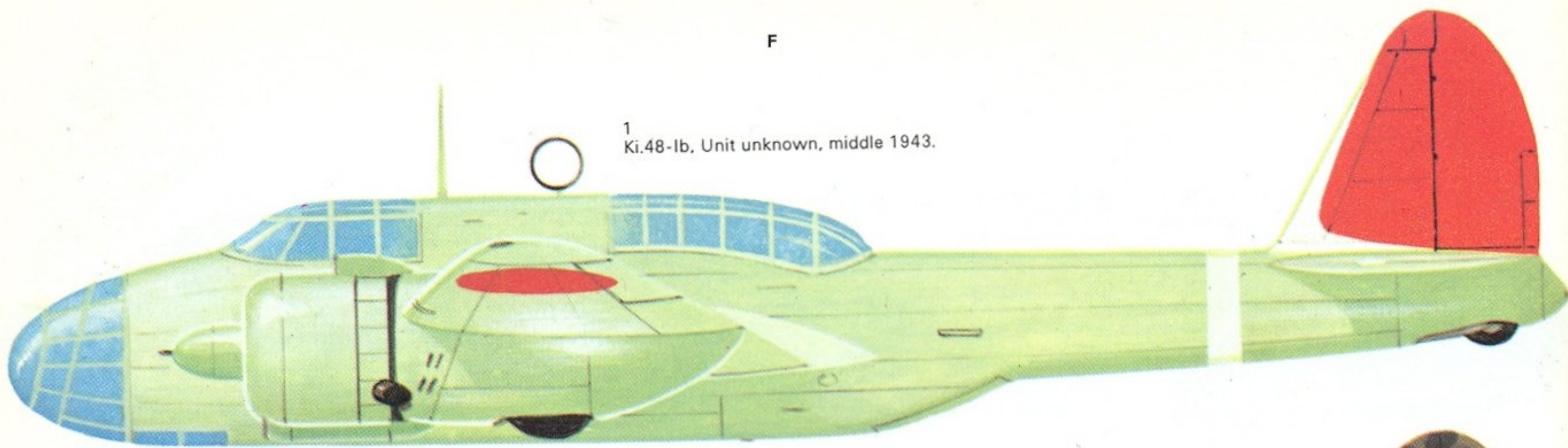
4
Ki.48-IIb, 208th Light Bomber Air Combat Regiment, 3rd Company, New
Guinea, April 1944. 1st Company white.



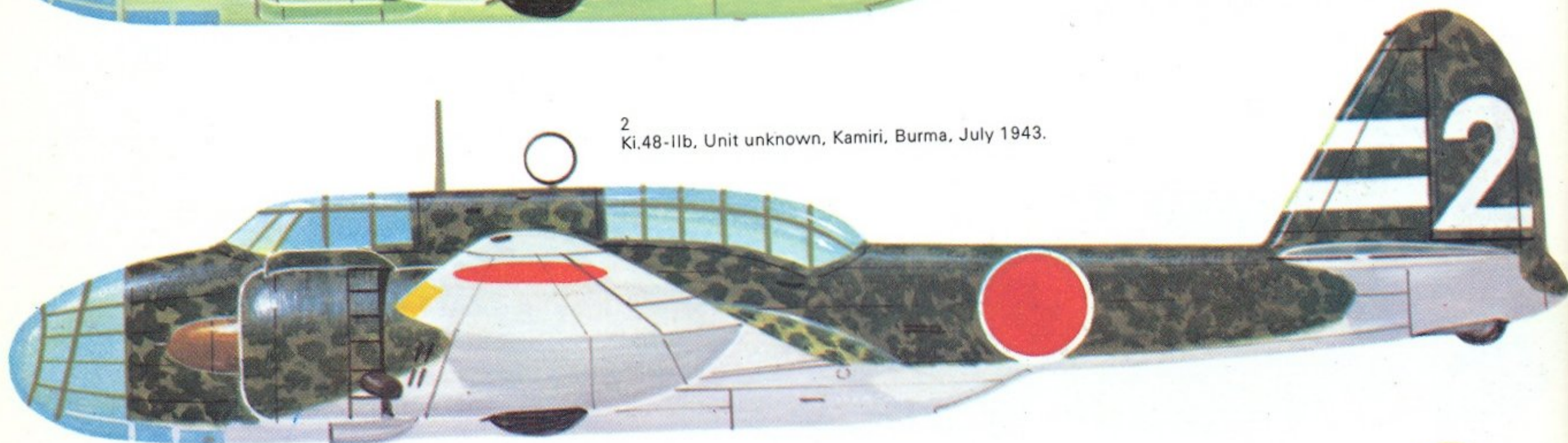
5
Ki.48-IIb, 208th Light Bomber Air Combat Regiment, 1st Company, New
Guinea, March 1944.



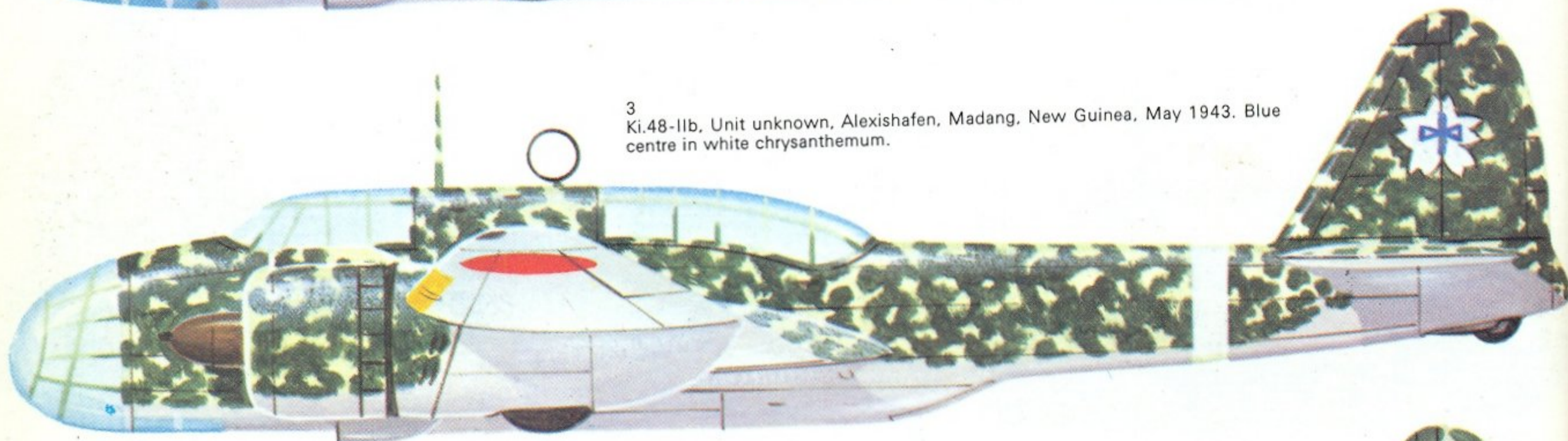
1
Ki.48-Ib, Unit unknown, middle 1943.



2
Ki.48-IIb, Unit unknown, Kamiri, Burma, July 1943.



3
Ki.48-IIb, Unit unknown, Alexishafen, Madang, New Guinea, May 1943. Blue centre in white chrysanthemum.



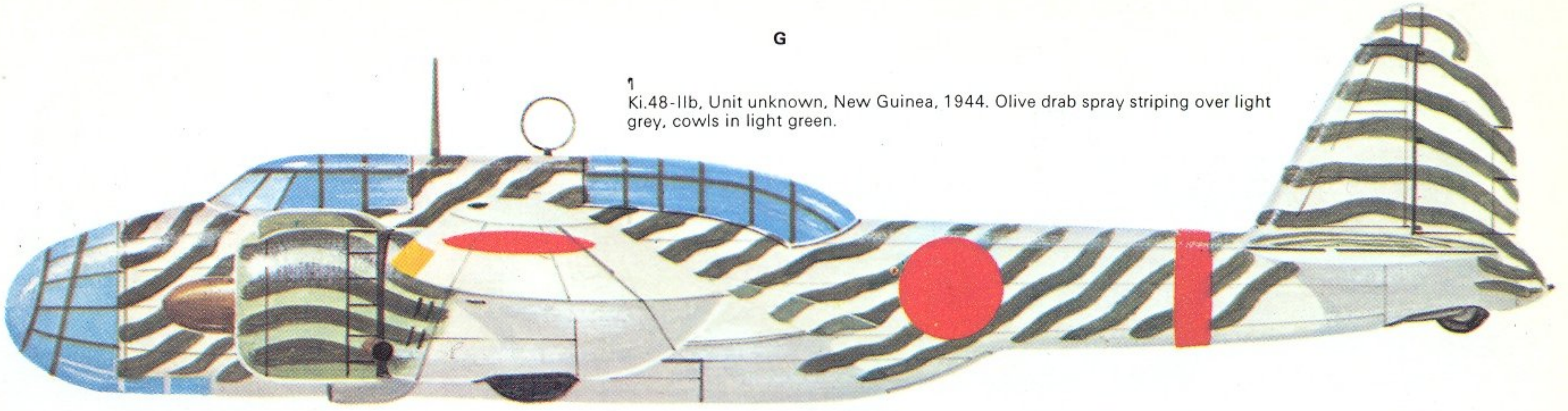
4
Ki.48-IIb, Unit unknown, Alexishafen, Madang, New Guinea, May 1943. Green centre in white chrysanthemum, remaining Company in red.



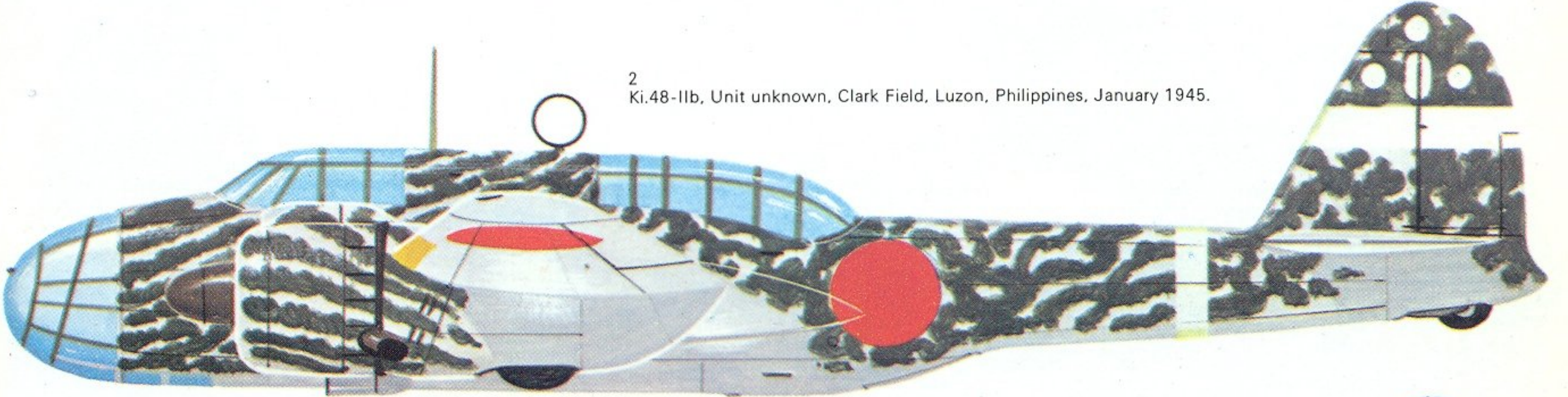
5
Ki.48-IIb, Unit unknown, New-Guinea, April 1944.



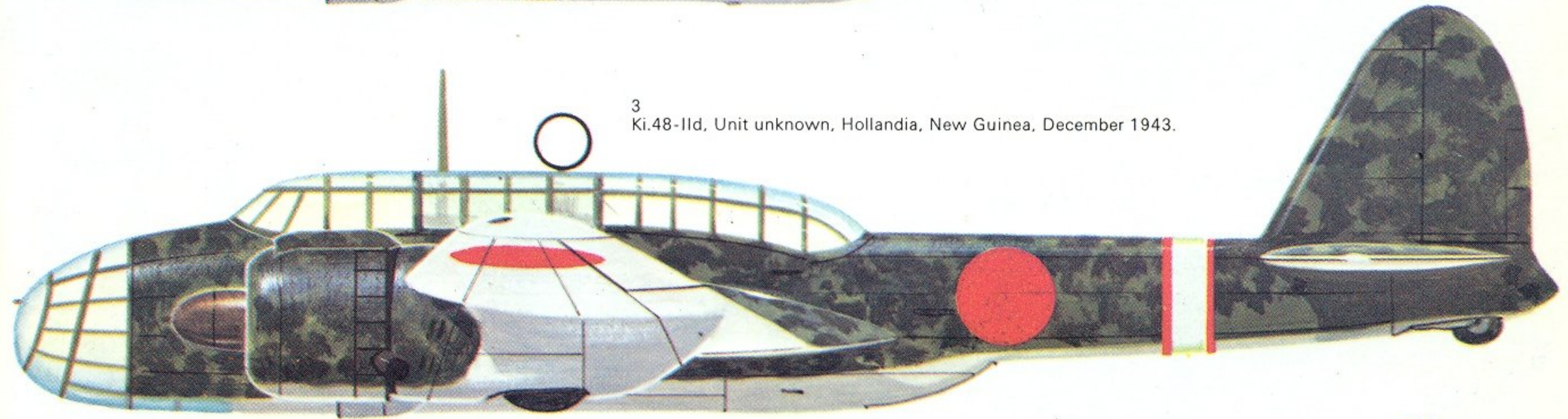
1
Ki.48-IIb, Unit unknown, New Guinea, 1944. Olive drab spray striping over light grey, cowls in light green.



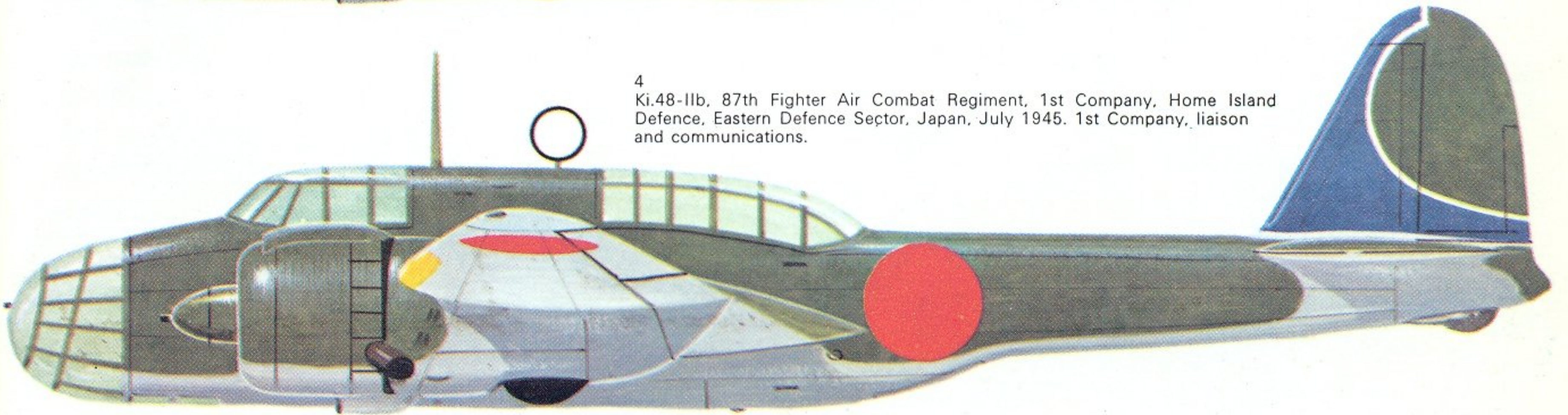
2
Ki.48-IIb, Unit unknown, Clark Field, Luzon, Philippines, January 1945.



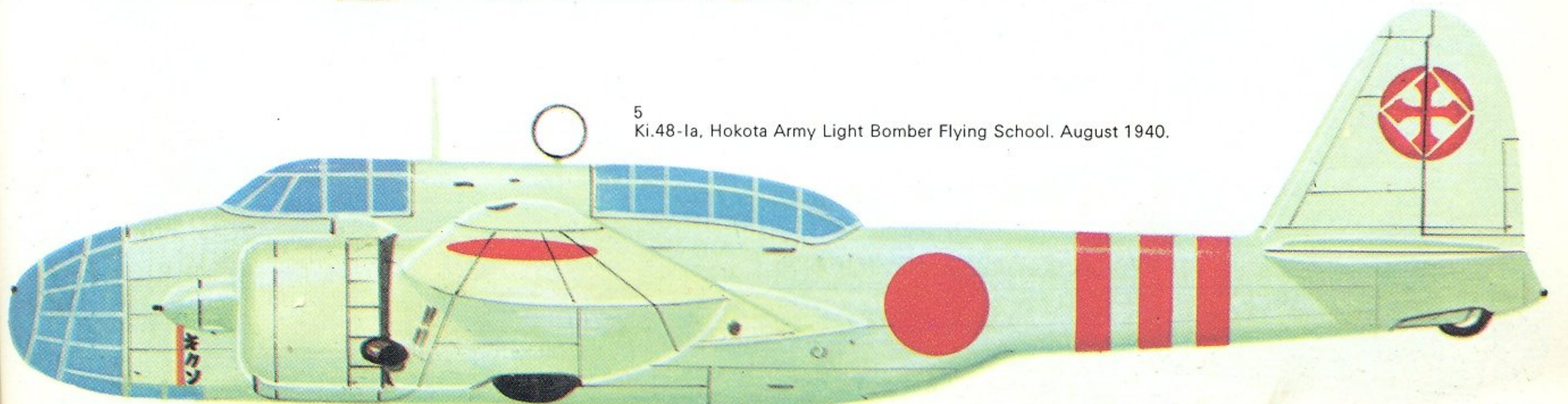
3
Ki.48-IIId, Unit unknown, Hollandia, New Guinea, December 1943.

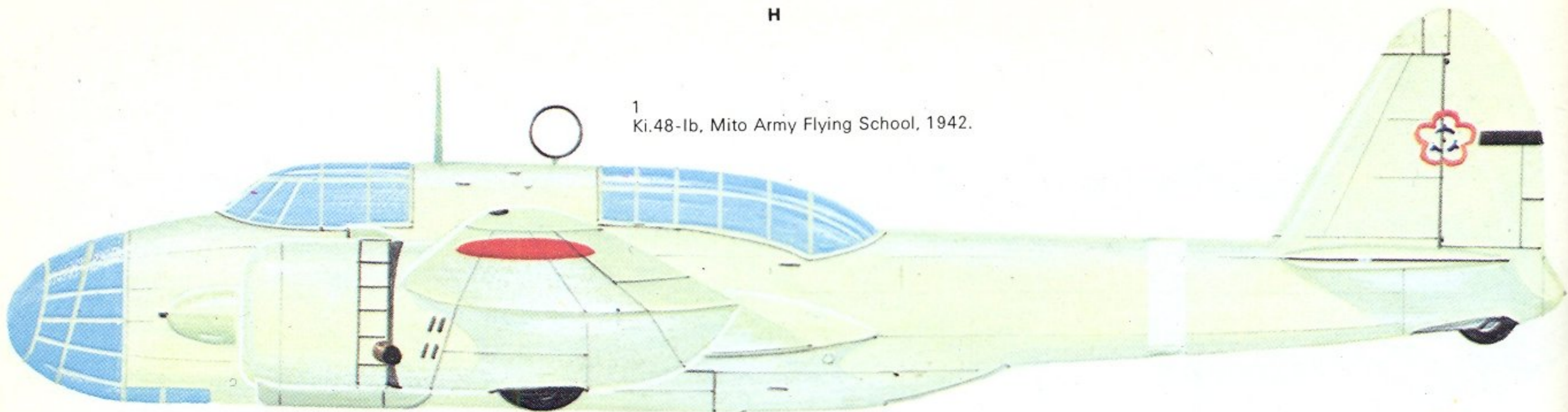


4
Ki.48-IIb, 87th Fighter Air Combat Regiment, 1st Company, Home Island Defence, Eastern Defence Sector, Japan, July 1945. 1st Company, liaison and communications.

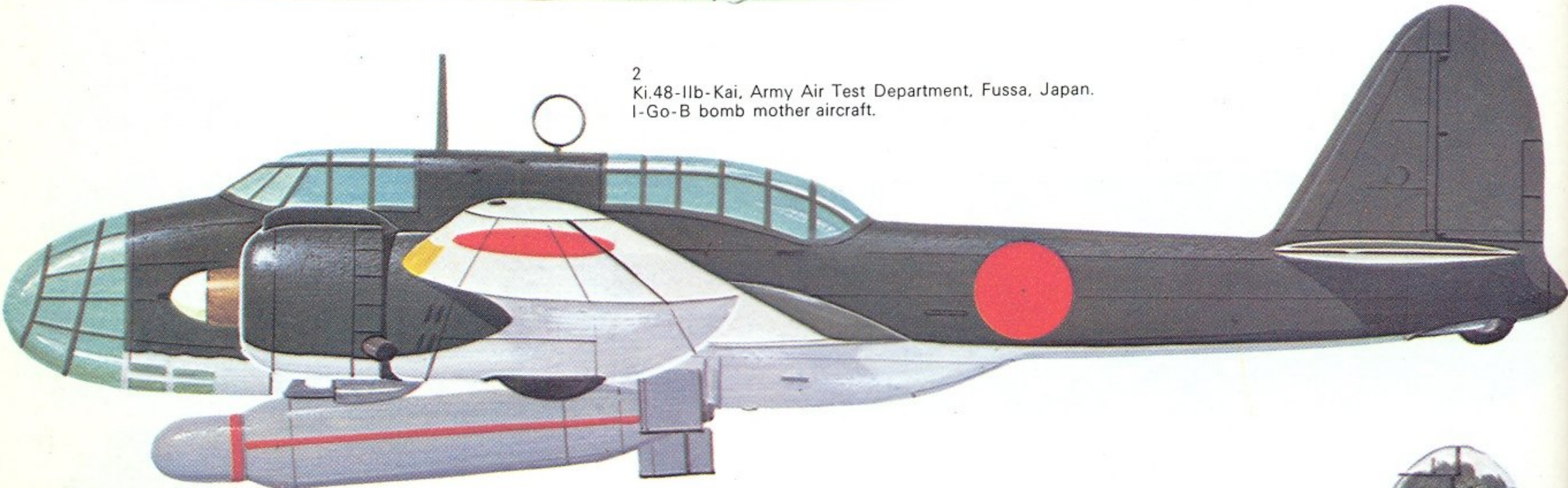


5
Ki.48-Ia, Hokota Army Light Bomber Flying School, August 1940.

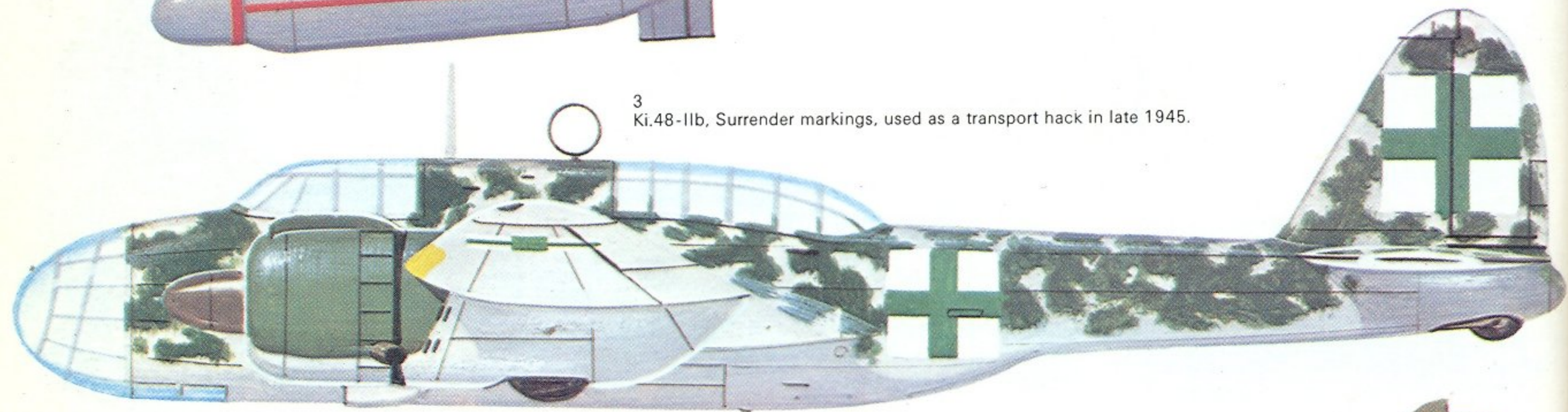




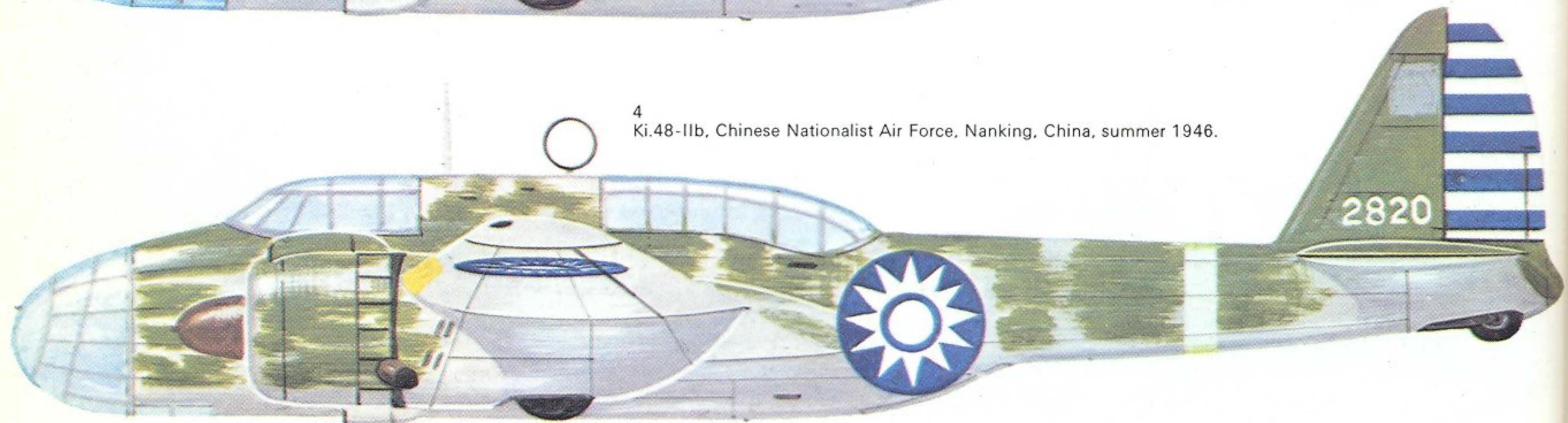
1
Ki.48-IIb, Mito Army Flying School, 1942.



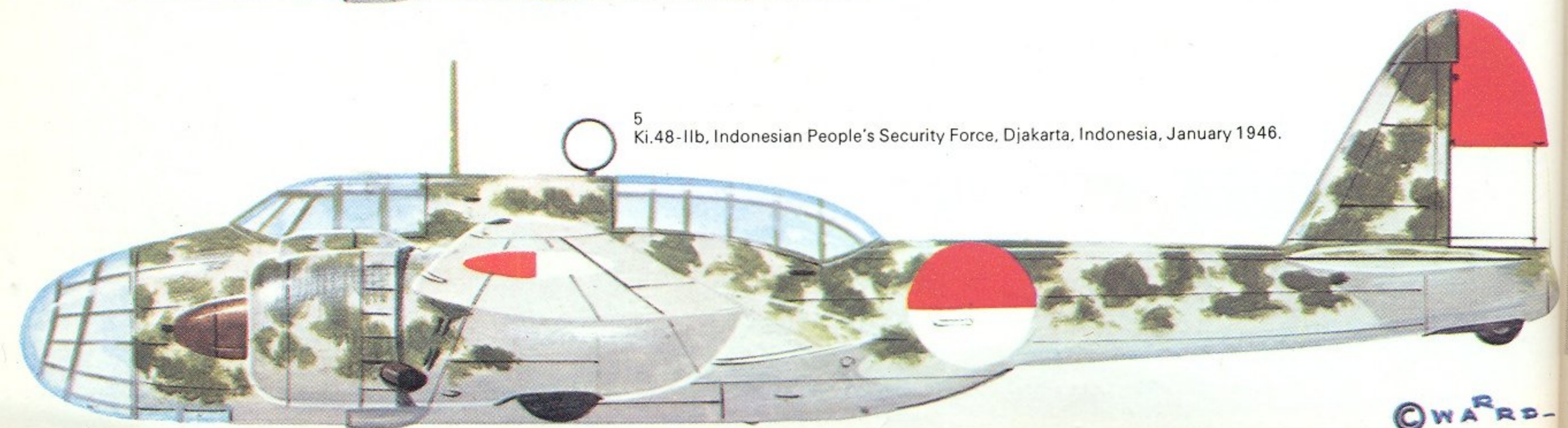
2
Ki.48-IIb-Kai, Army Air Test Department, Fussa, Japan.
I-Go-B bomb mother aircraft.



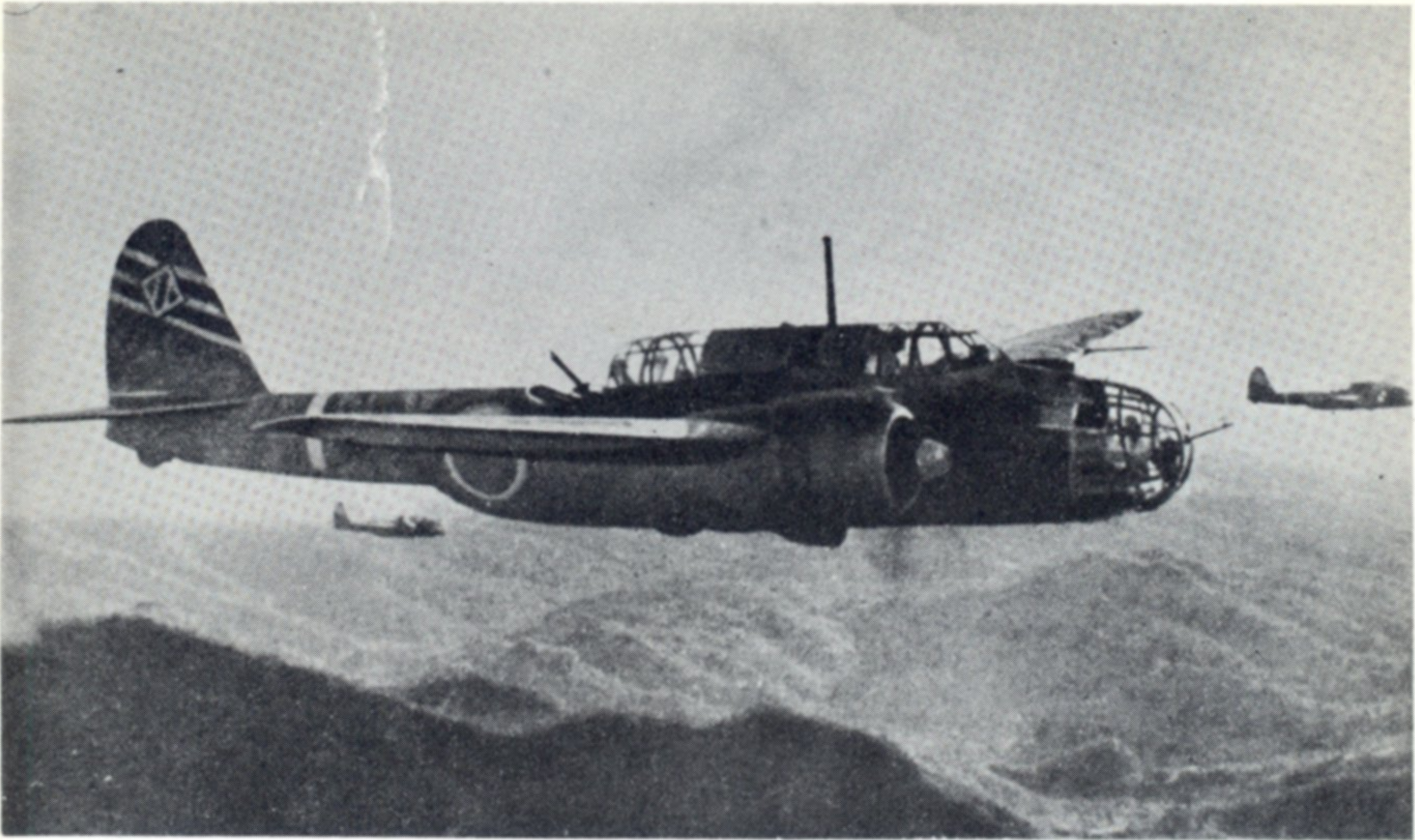
3
Ki.48-IIb, Surrender markings, used as a transport hack in late 1945.



4
Ki.48-IIb, Chinese Nationalist Air Force, Nanking, China, summer 1946.

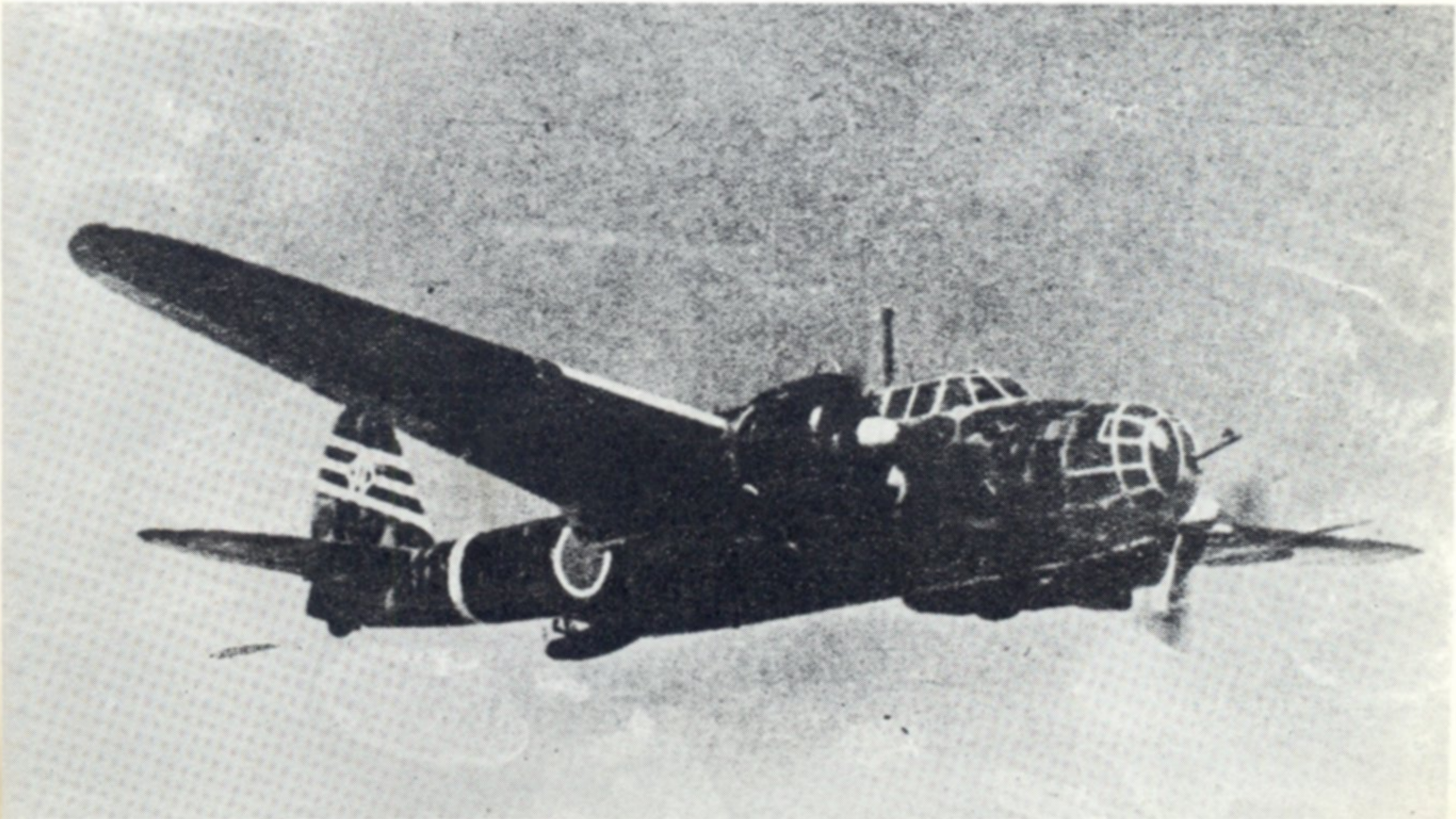


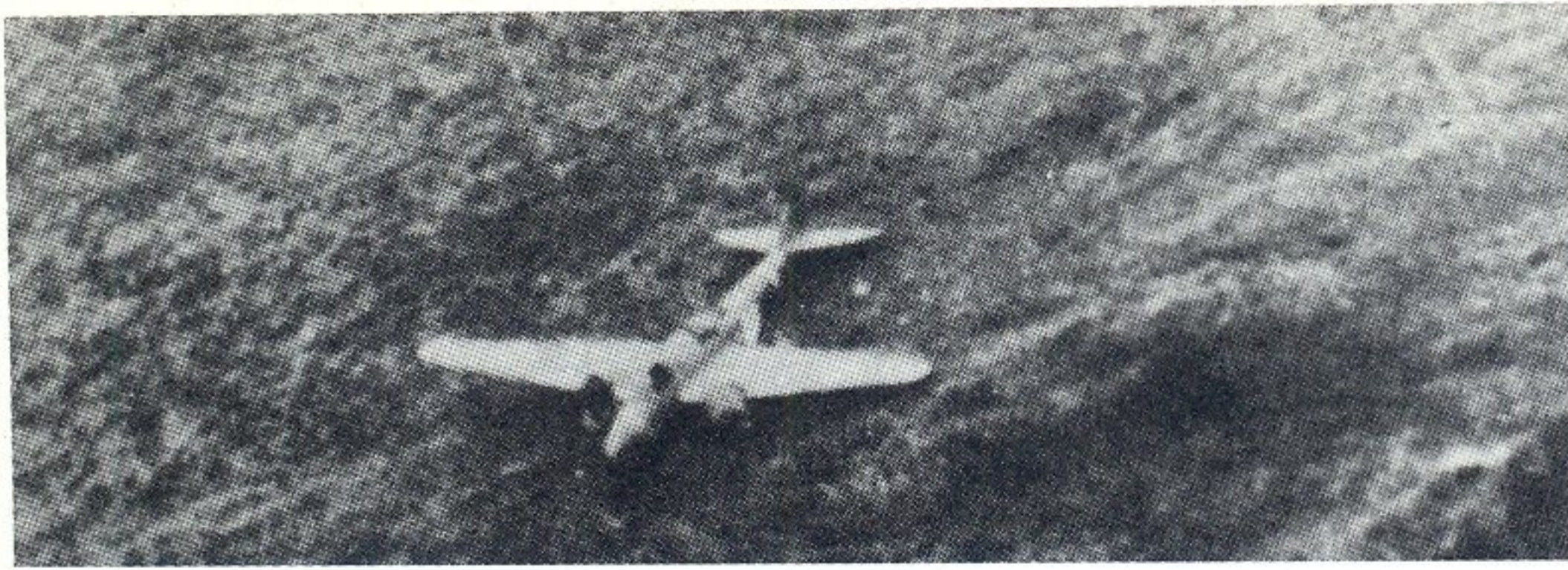
5
Ki.48-IIb, Indonesian People's Security Force, Djakarta, Indonesia, January 1946.



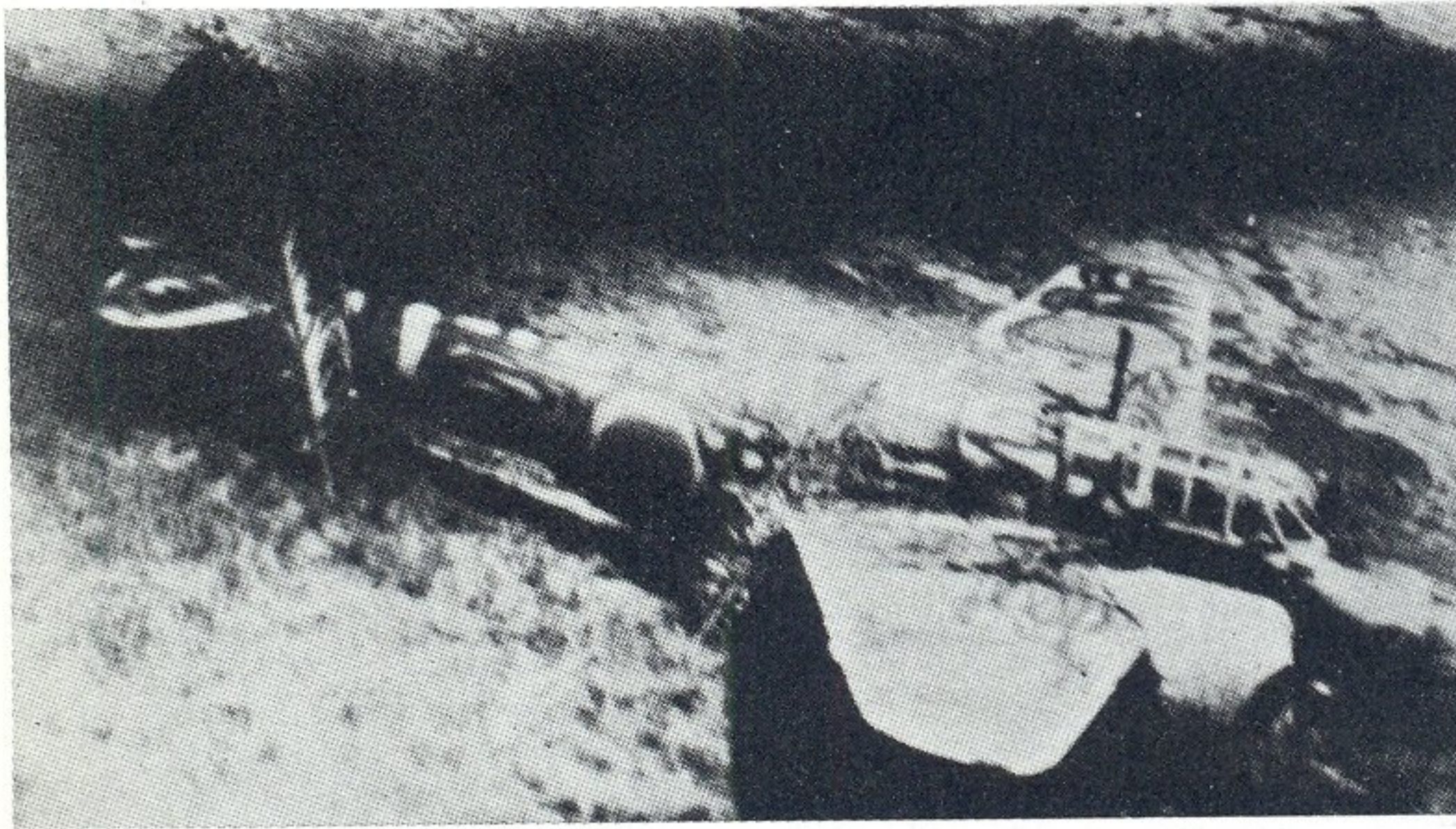
Above: Ki.48-IIb of 34th Light Bomber Air Combat Regiment over New Guinea, December 1943. (Hiko Shonen via Bueschel)

Below: The 34th and 35th regiments were rushed to New Guinea from French Indo-China as replacements. They were totally destroyed there. (Koko Shonen via Bueschel)

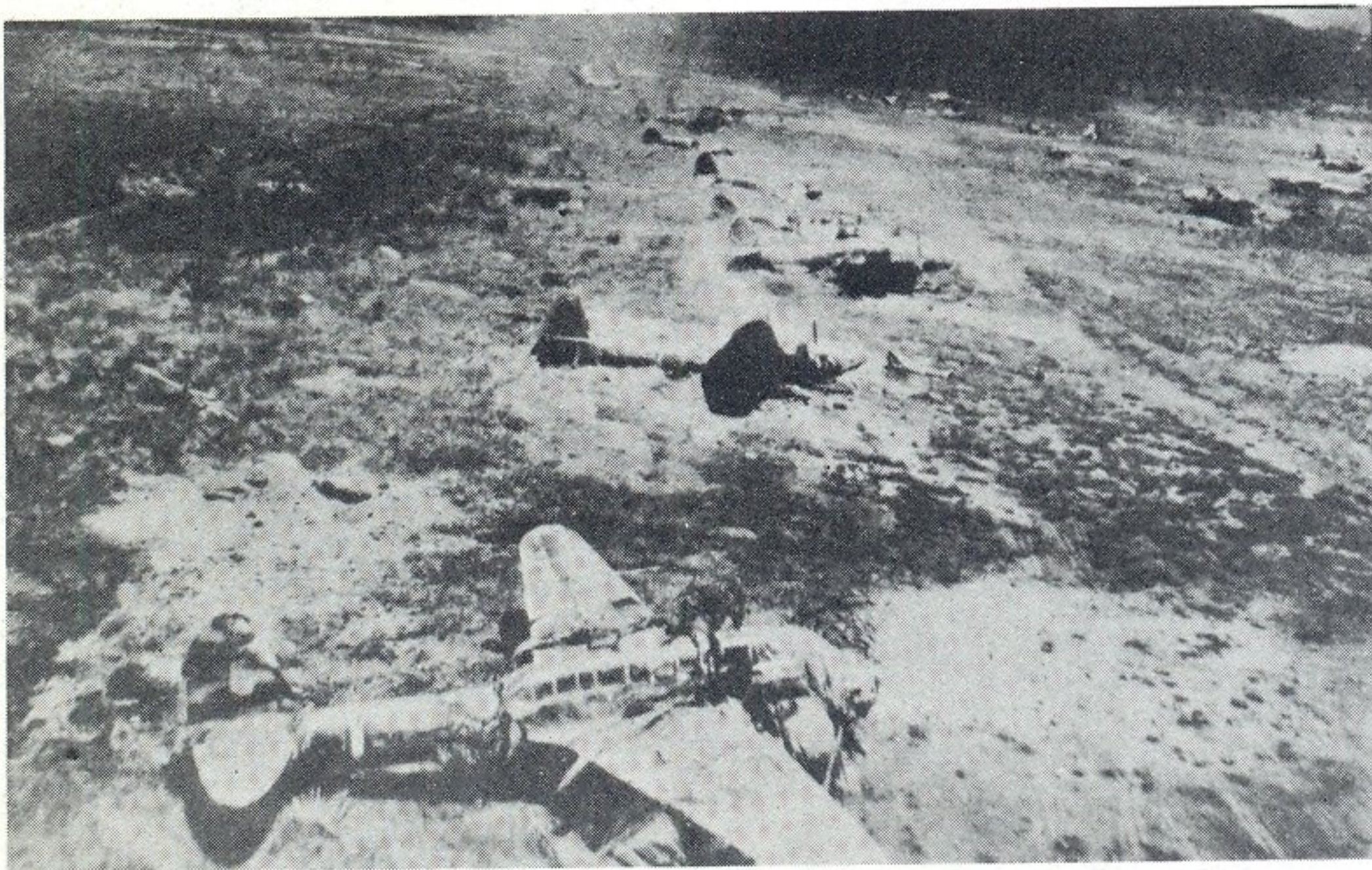




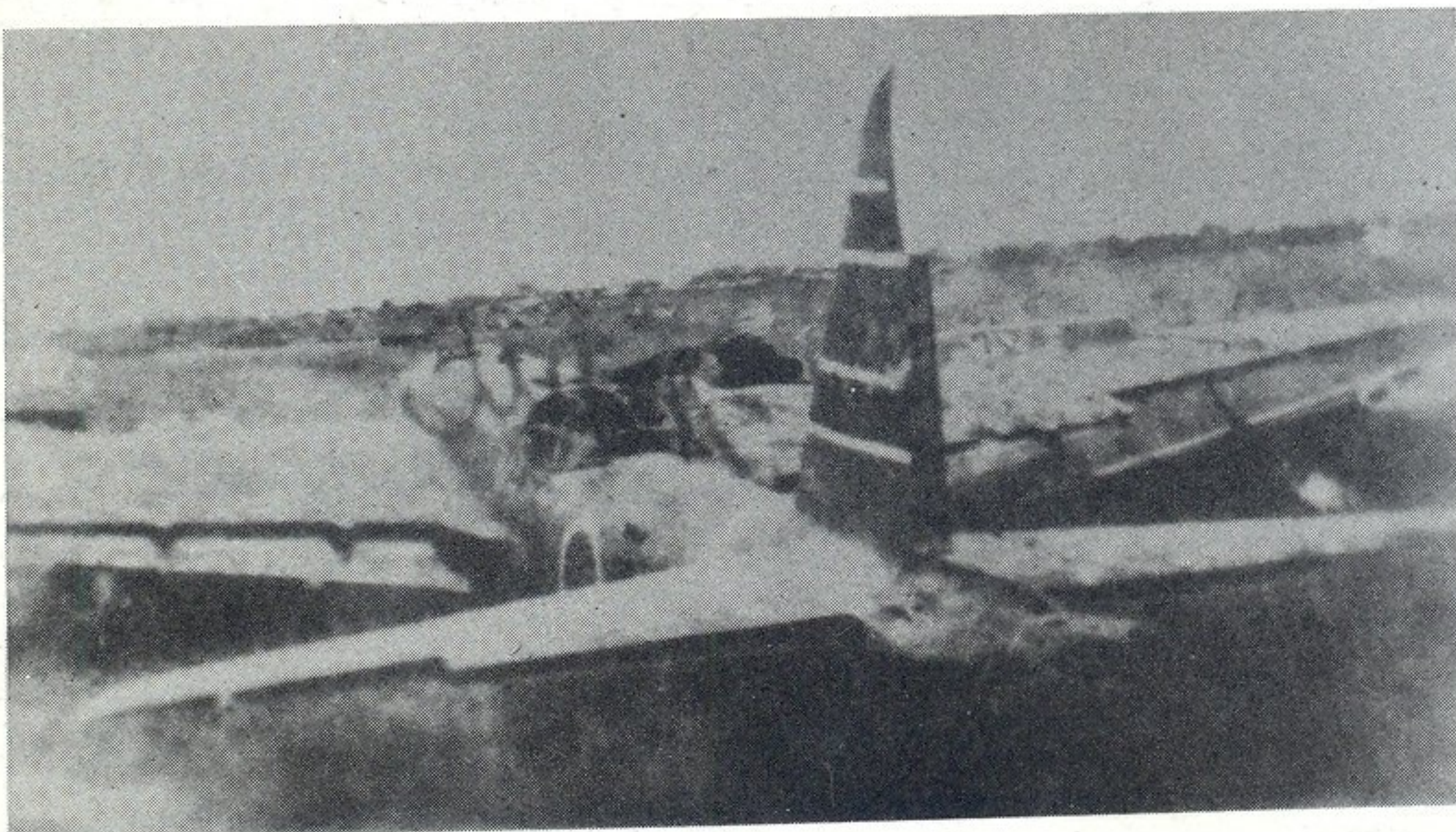
Spotted from the air by an American 5th Air Force B-25, a prelude to destruction. (USN via Bueschel)



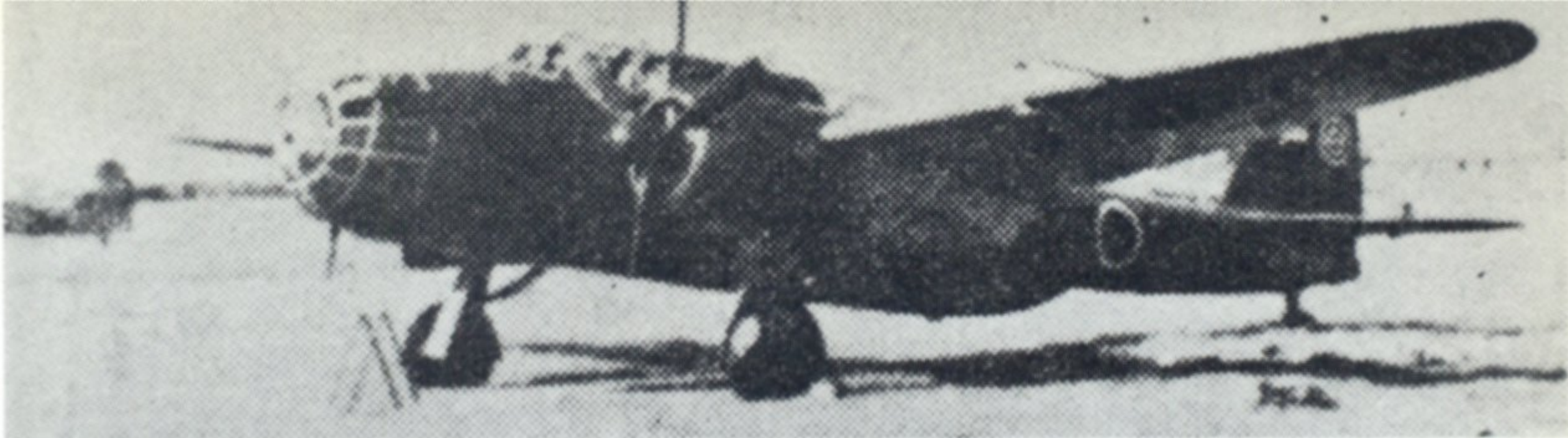
Late Model Ki.48-IIb at Hollandia, New Guinea. (USN via Bueschel)



Low level reconnaissance gave Allied intelligence its first look at new models. This modified "Lily" at Hollandia in March 1944 has a full-length greenhouse canopy. (USAAF via Bueschel)



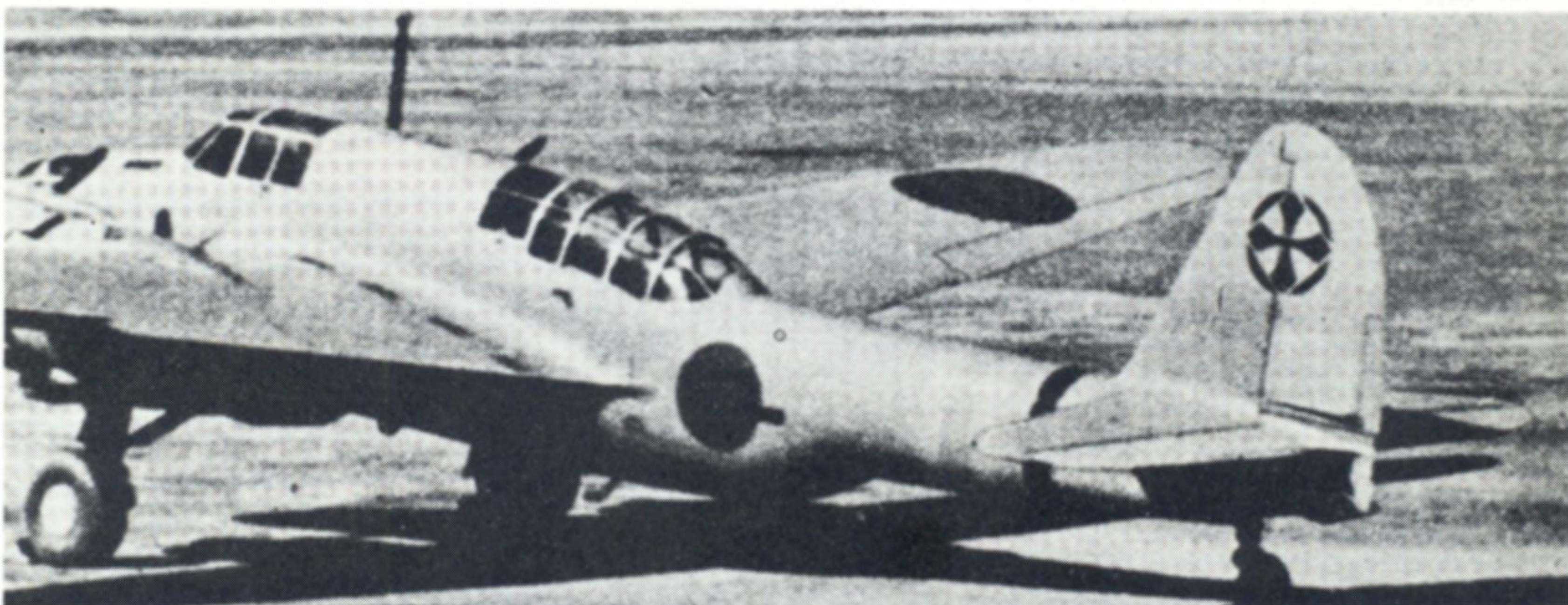
Marked wreckage of Ki.48-IIb at Hollandia, believed to be 12th Light Bomber Air Combat Regiment decimated in New Guinea. (Warren E. Woolman via Bueschel)



Above: The 90th regiment opposed Chennault's 14th Air Force in China until the end of the Pacific War. (Sekai No Kokuki via Bueschel)
Below: Ki.48-IIb at Hokota in December 1942. (Koku Asahi via Bueschel)



Below: Training at Hokota on 99 Sokei aircraft was intensified for New Guinea. (Koku Asahi via Bueschel)



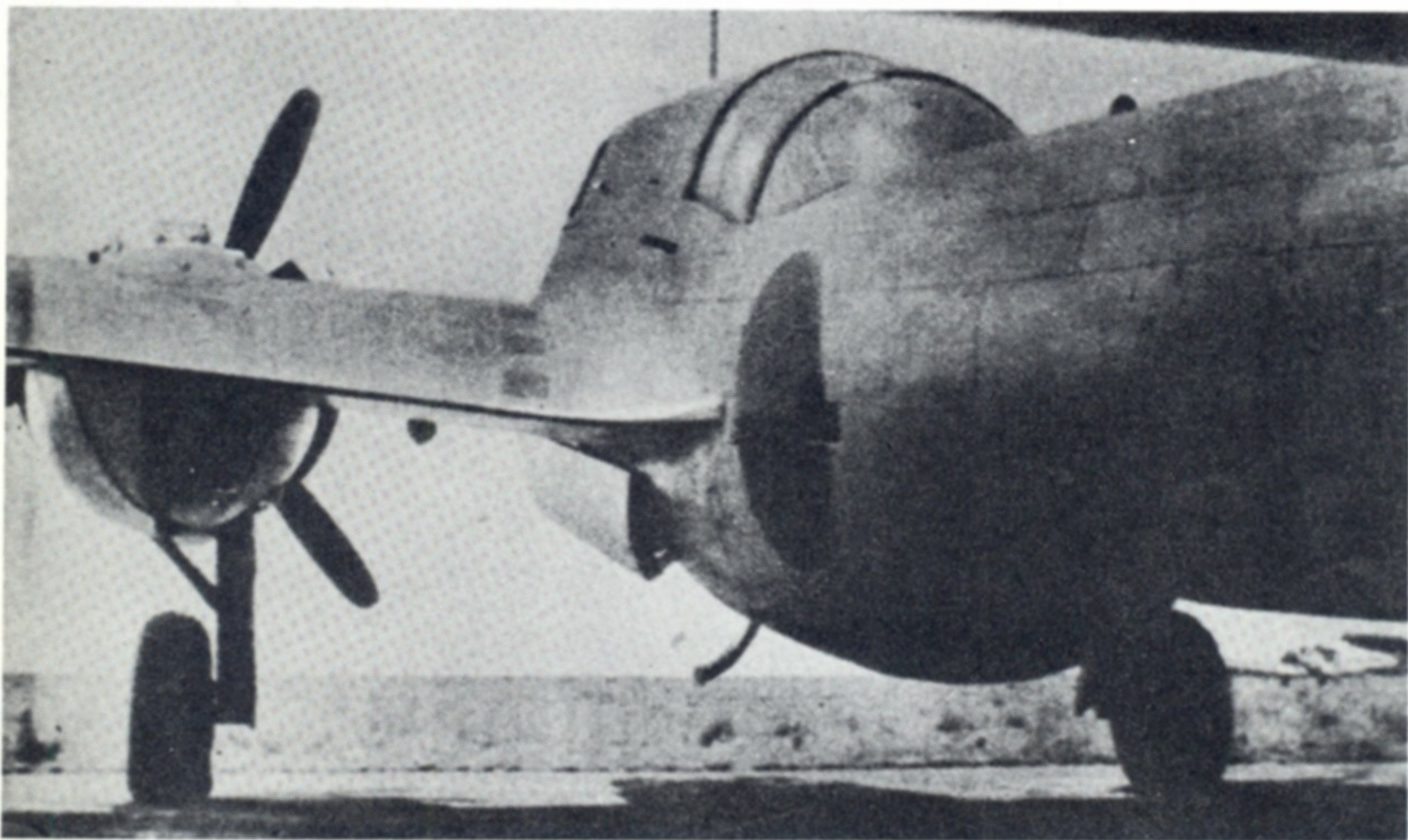
Below: Ki.48-IIb of 90th Light Bomber Air Combat Regiment in China, late 1943. (Sekai No Kokuki via Bueschel)



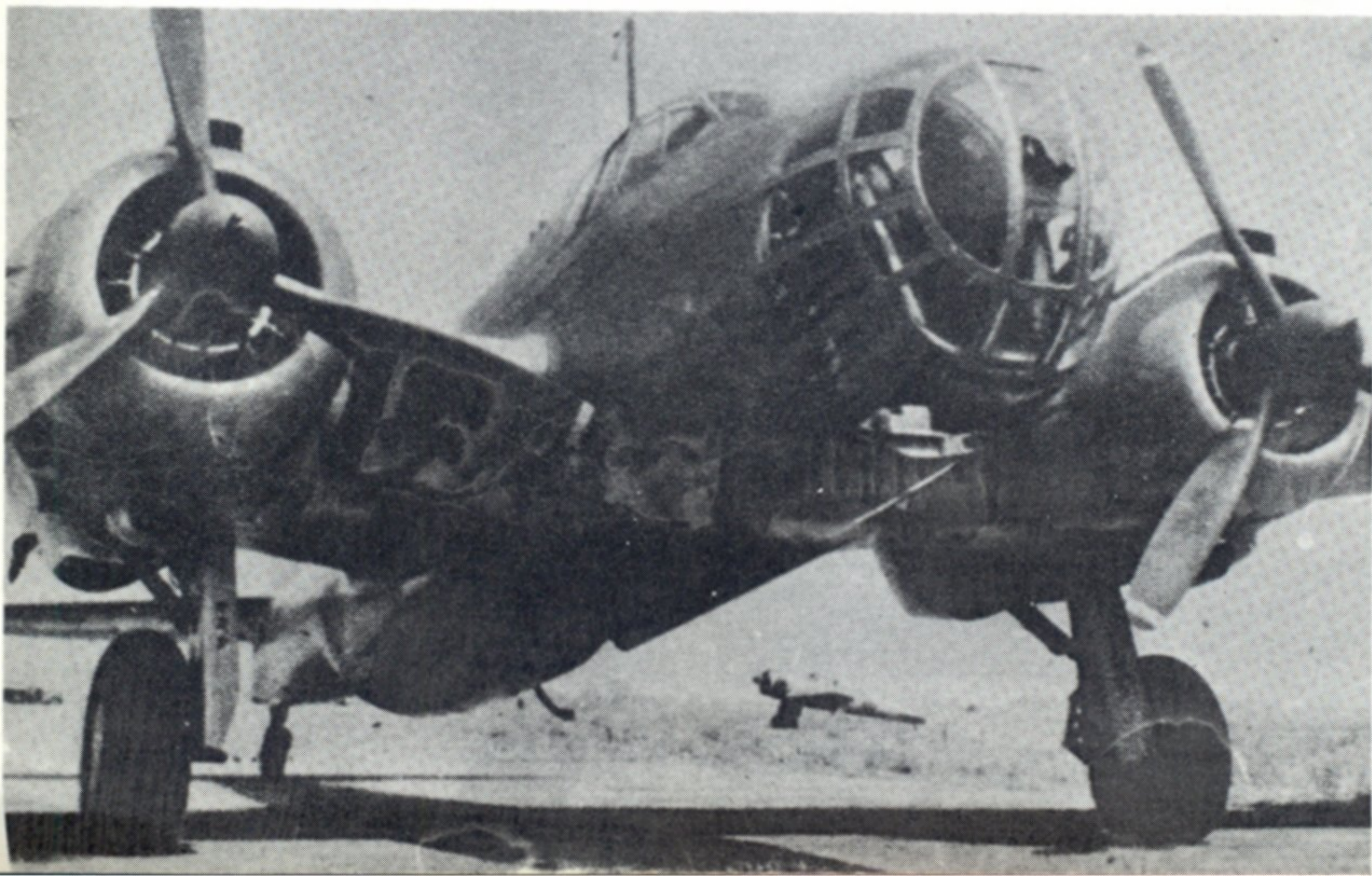


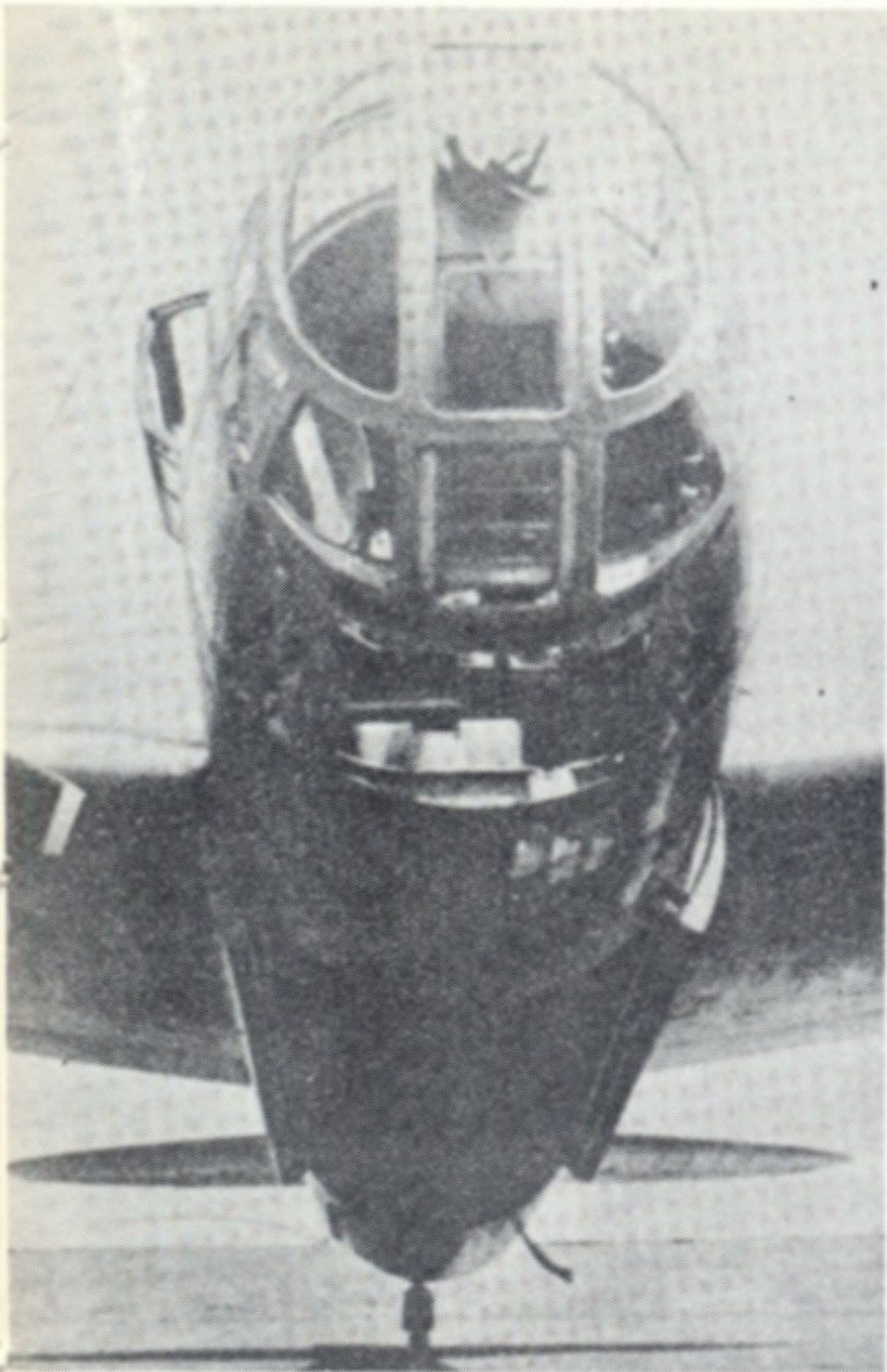
Above: Initial Hokota training was by units. (Kokutisiki via Bueschel)

Below: Distinctive ventral pot-belly of "Lily" led to its description as a "Japanese Baltimore". (Hiko Shonen via Bueschel)



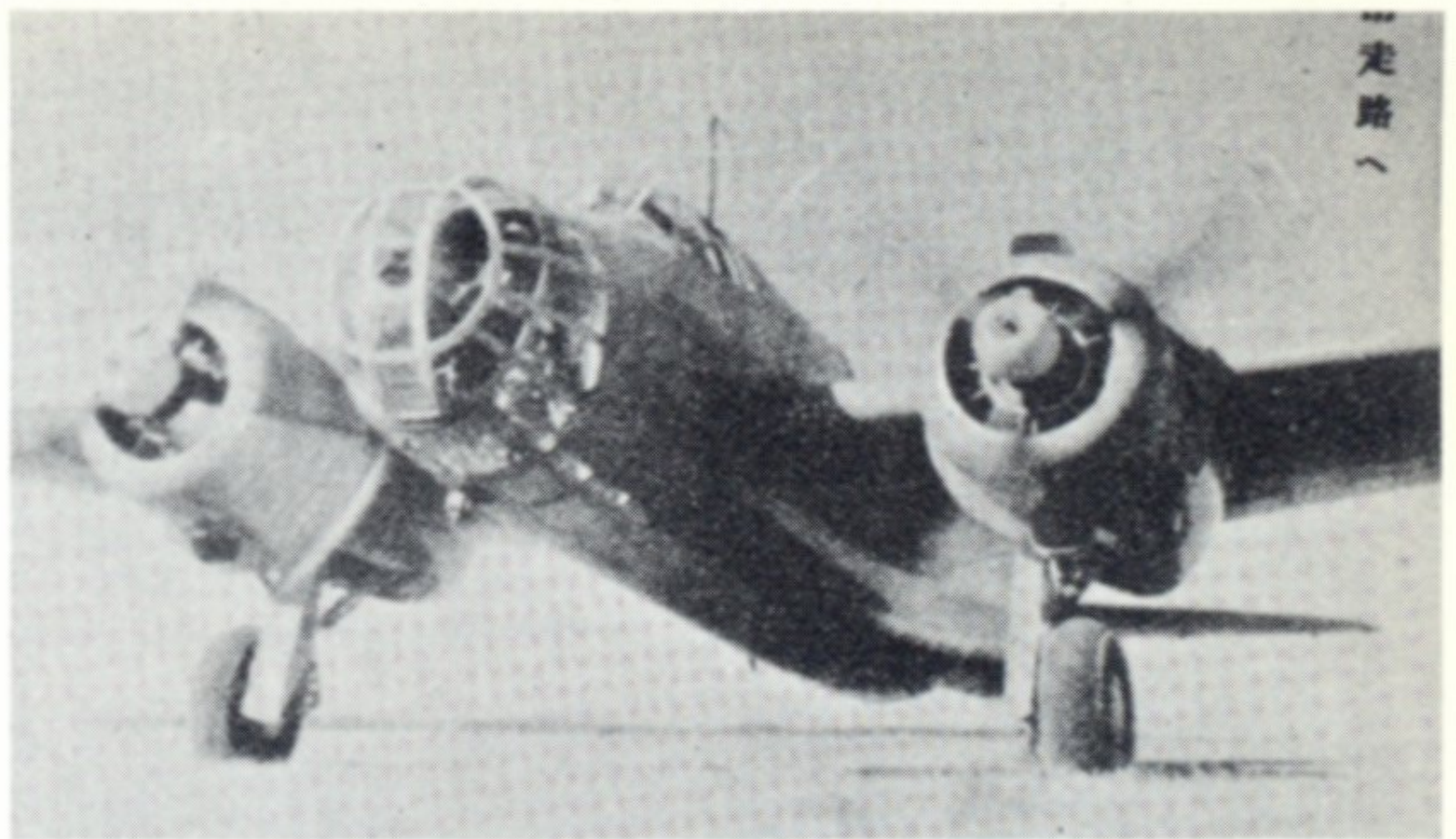
Below: On the line at Hokota, June 1944. (Hiko Nippon via Bueschel)



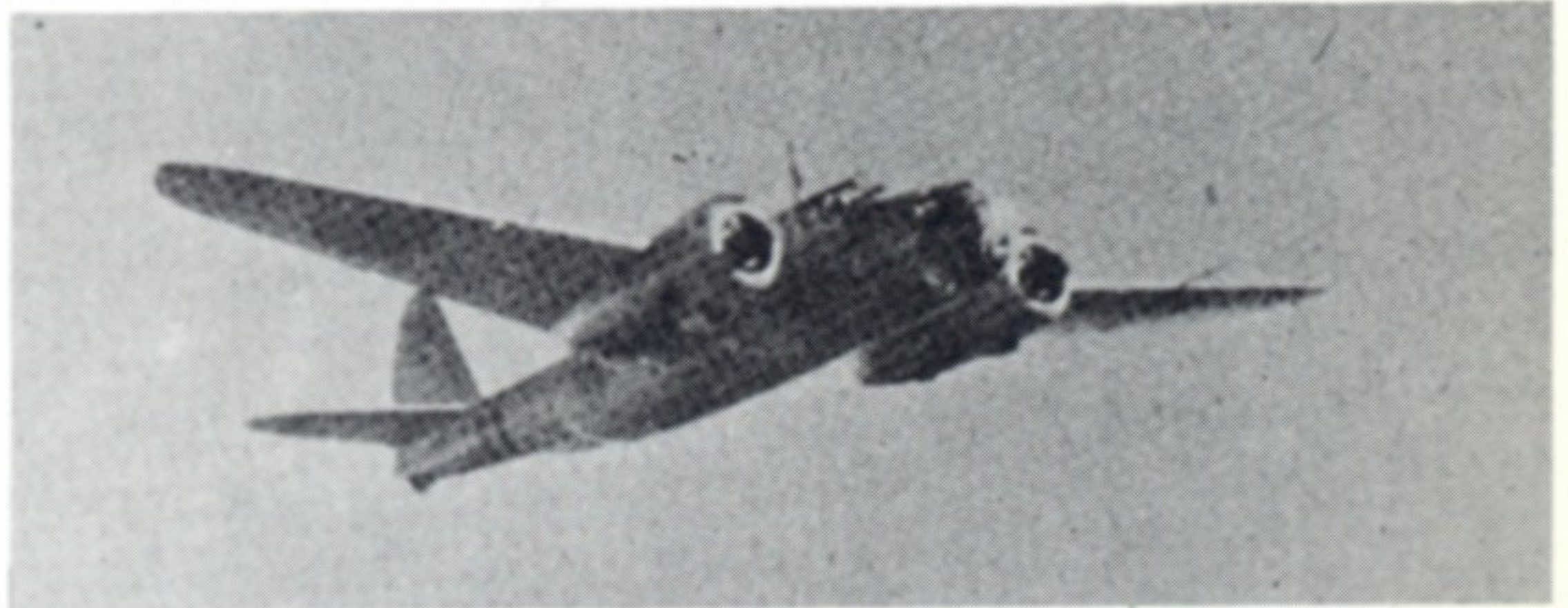


Above left: Nose gun position, Ki.48-IIb. (Hiko Nippon via Bueschel)

Above right: As New Guinea disaster became apparent, training at Hokota became individual by crews for subsequent unit assignment. (Kokutisiki via Bueschel)



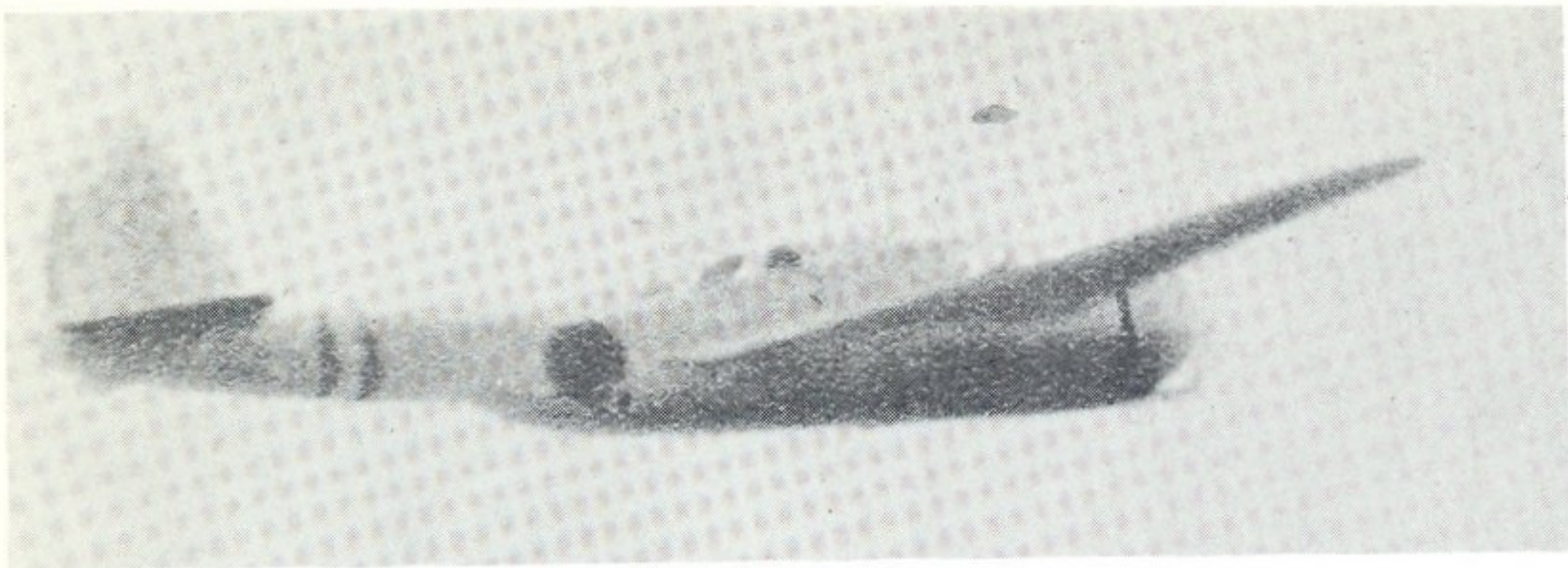
Above: Warming up. (Koku Shonen via Bueschel)



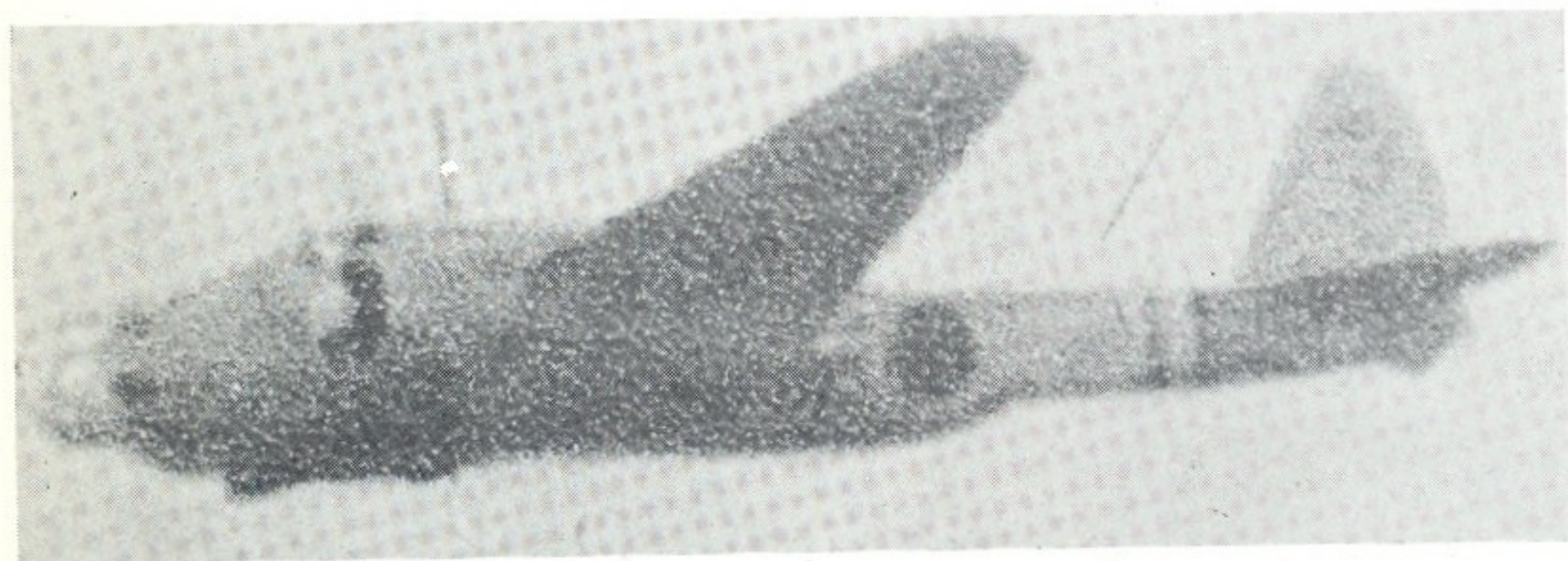
Right: 1944 training was by complete crews. (Koku Shonen via Bueschel)

Below: Taking off. (Mannosuke Toda via Bueschel)

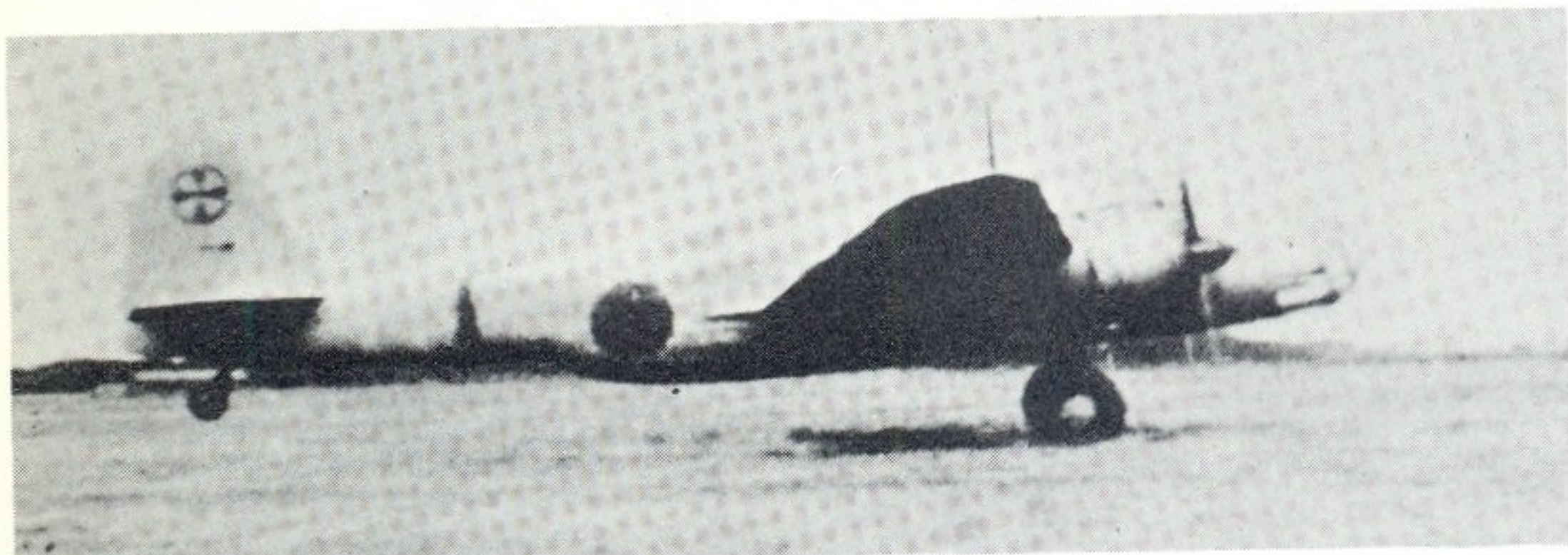




Above: In-the-air crew training. (Hiko Nippon via Bueschel)

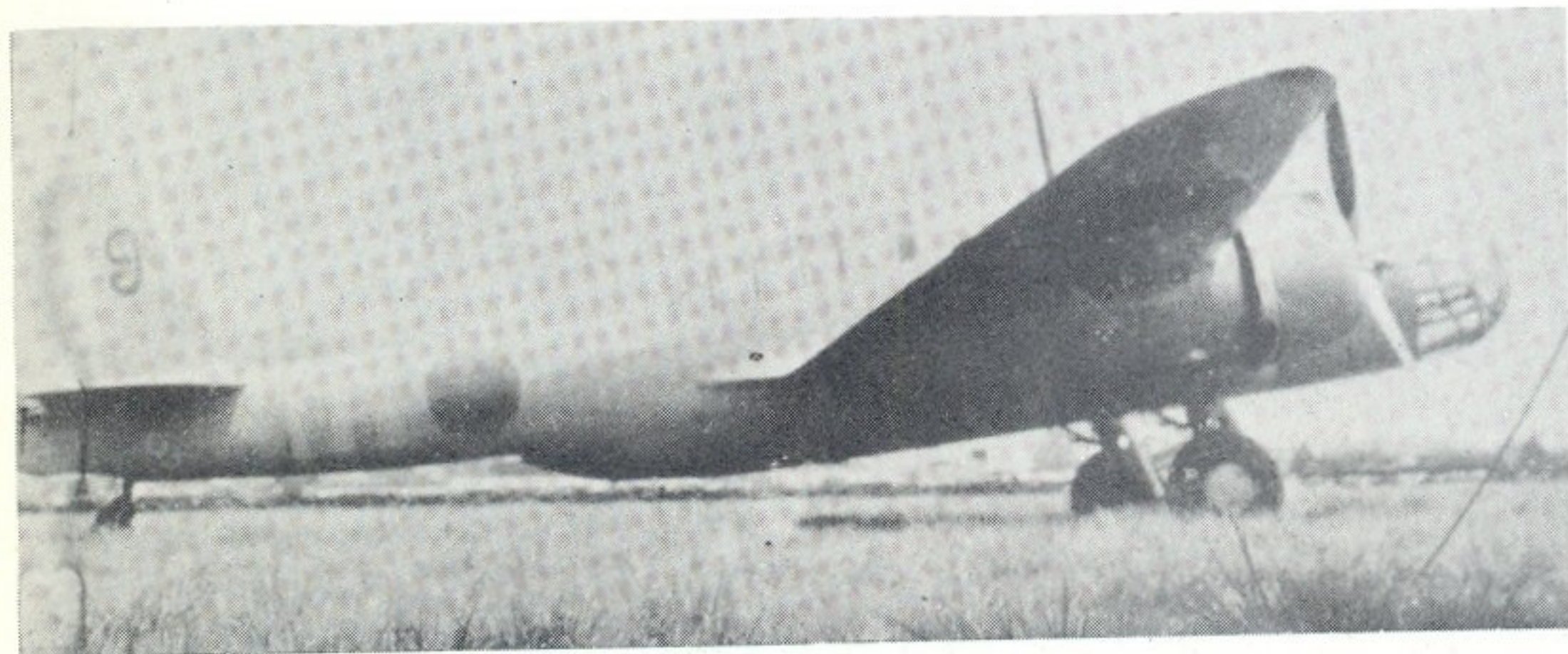


Above: Heading back. (Hiko Nippon via Bueschel)

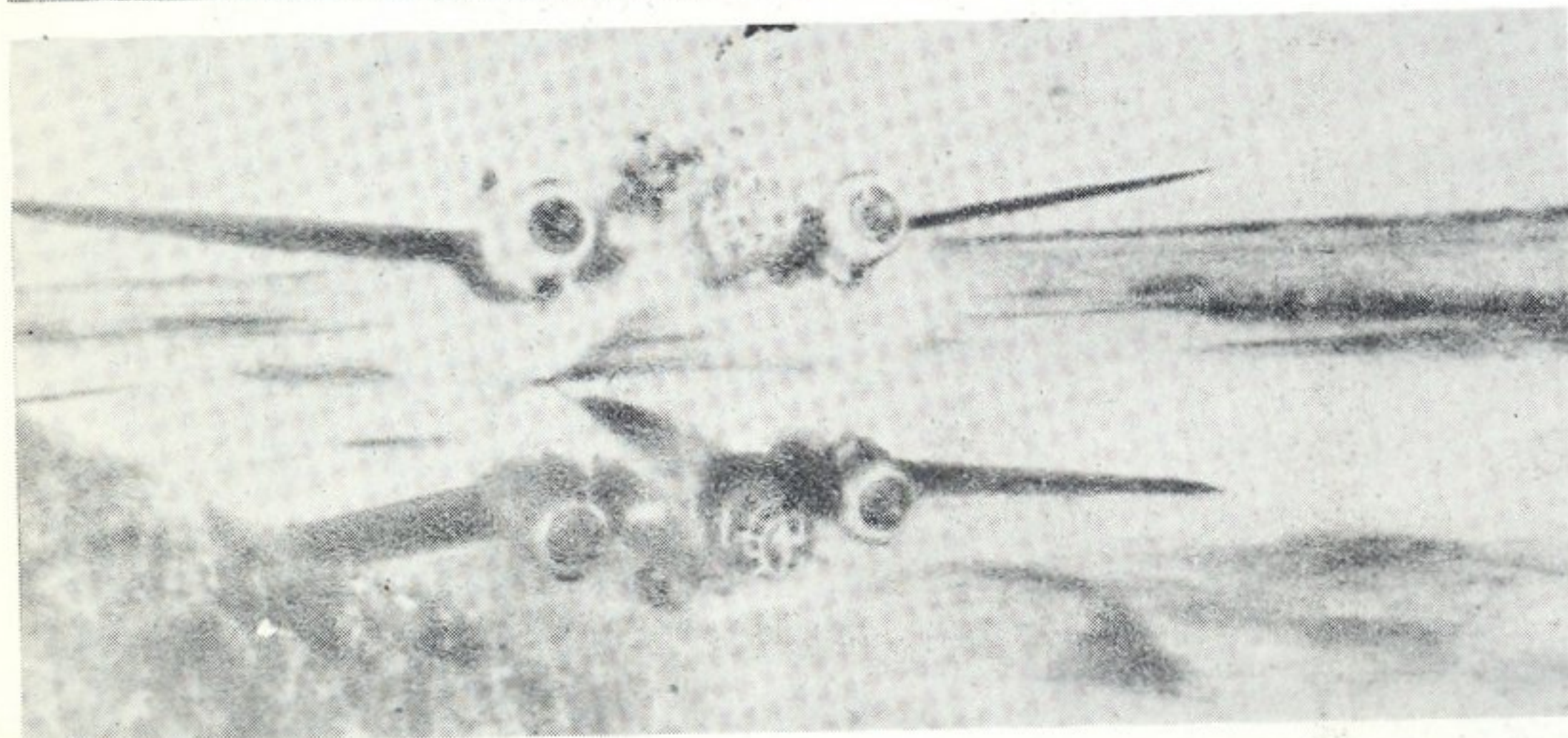


Above: The 99 Sokei led the Japanese Army closer and closer to India. (Koku Asahi via Bueschel)

Left: Going down. (Hiko Nippon via Bueschel)



Dorsal fin was fitted to late production Ki.48-IIb models to improve stability. (Mannosuke Toda via Bueschel)



99 Sokei units were rushed to the Philippines between October and December 1944 to defend the islands against invasion. (Hiko Shonen via Bueschel)



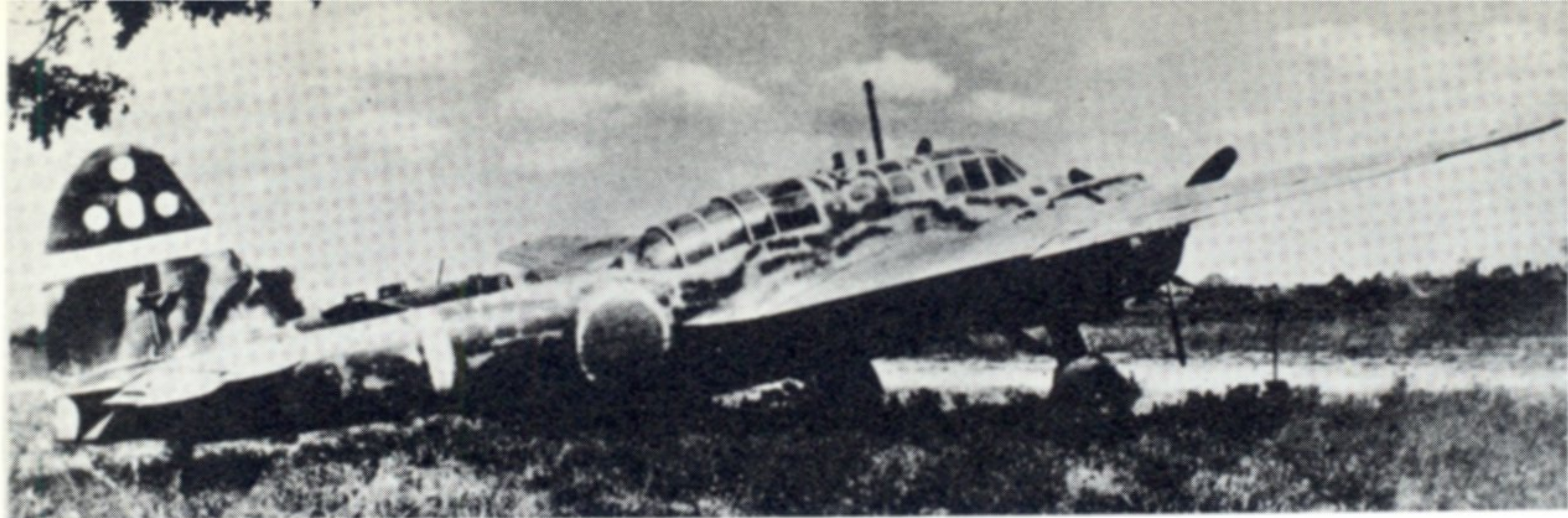
Above: Dive brakes were fitted to dive bomber prototypes. Some entered service where dive brakes were often removed to lighten weight. (Mannosuke Toda via Bueschel)

Below: Flame dampeners were fitted to exhausts for night operations in China. (Koku Asahi via Bueschel)



Below: Heading out for a mission over the Gulf of Leyte from an Army base on Luzon, November 1944. (Koku Asahi via Bueschel)





Above: Late model "Lily 2" in the simplified markings of the 208th Light Bomber regiment at Clark Field, Philippines, January 1945. (USAAF via Bueschel)



Left: The New Guinea story of destruction repeated itself in the Philippines. (USAAF via Bueschel)

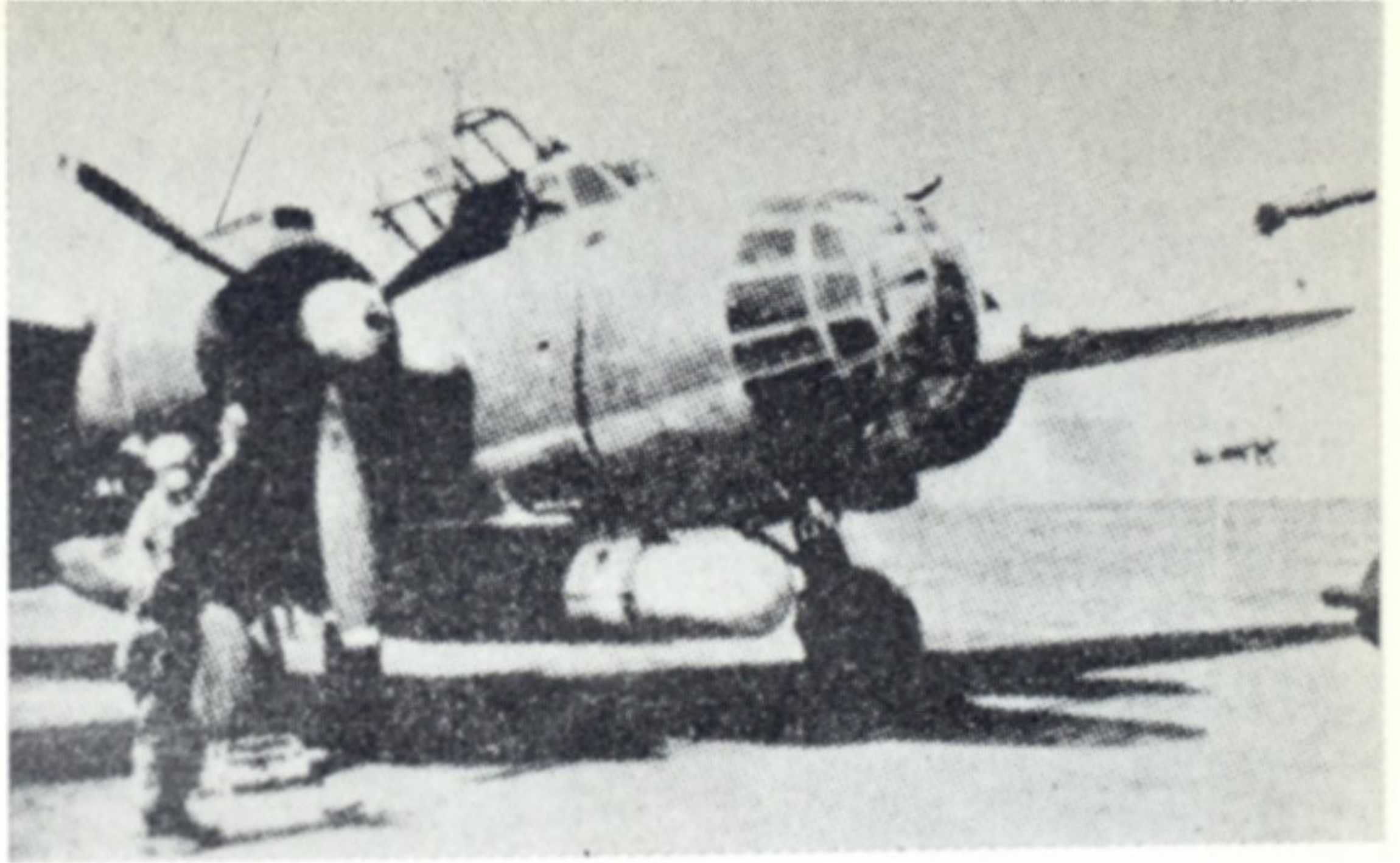


Left: Last major production model Ki.48-IIc replaced nose gun with 12.7 mm Type 1 and added a side-firing 7.7 mm Type 89 M.G. (Koku Shonen via Bueschel)



Below: Testing of the Ki.48-IIb-Kai Type 99 Special Attack bomber was under the supervision of Major Hideo Sakamoto, chief bomber test pilot of the Flight Test Department at Fussa. (Sekai No Kokuki via Bueschel)

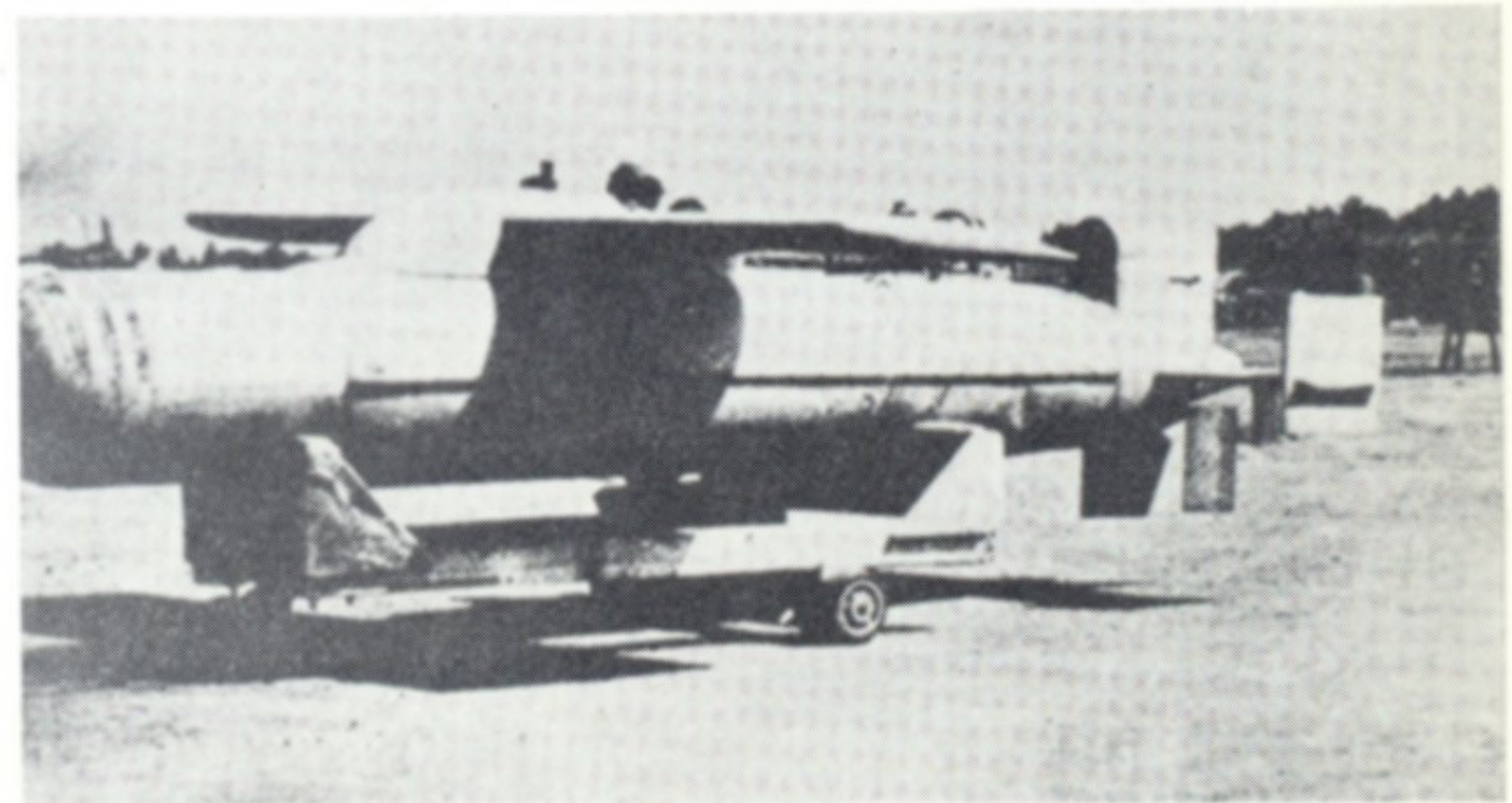
Modified 99 Sokei "parent" aircraft released Ki.148 over target area, and controlled flight by stick movements transmitted by radio. (Sekai No Kokuki via Bueschel)



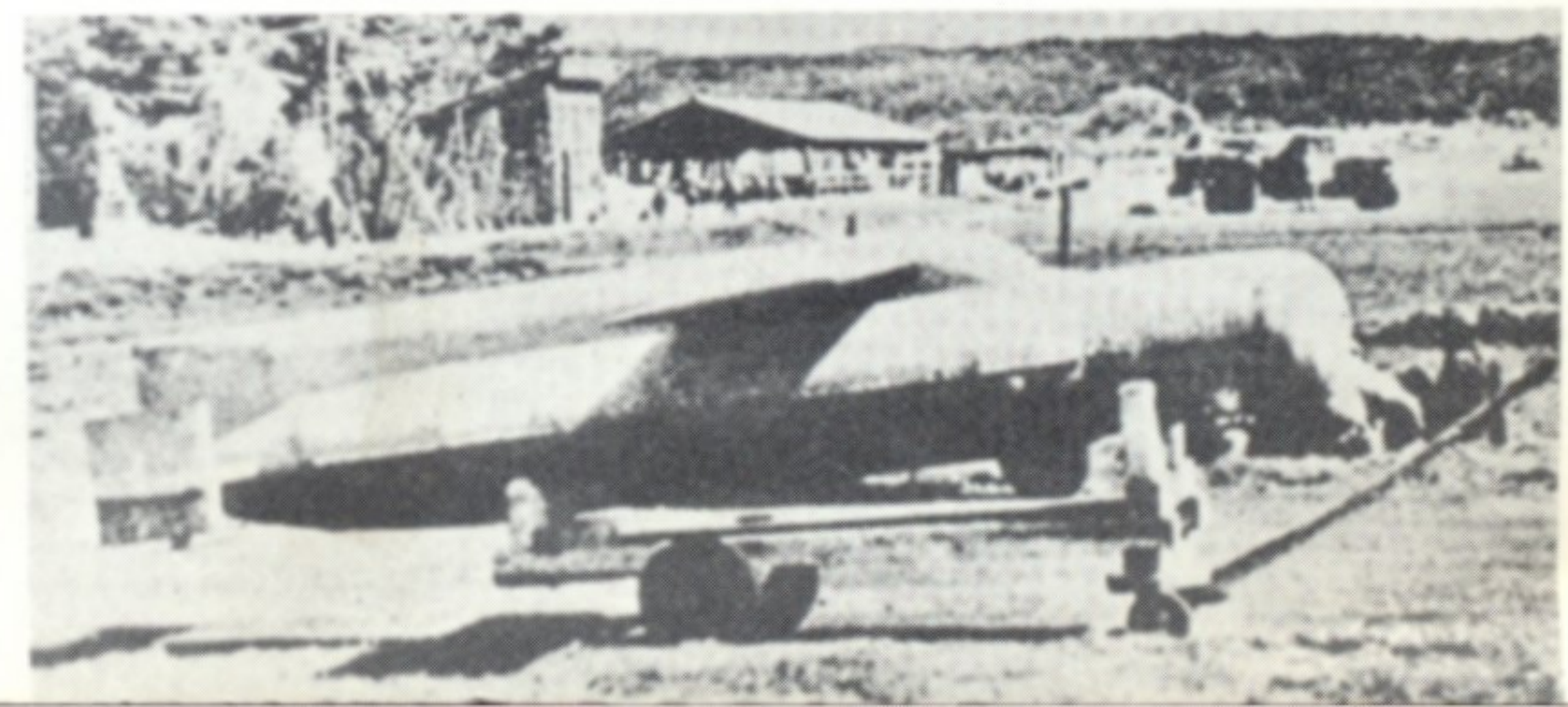
Modification of "parent" aircraft began in July 1944. Prototype test Ki.148 missiles were ready in October. Tests began in November leading to production authorization for the flying bomb. (Mannosuke Toda via Bueschel)

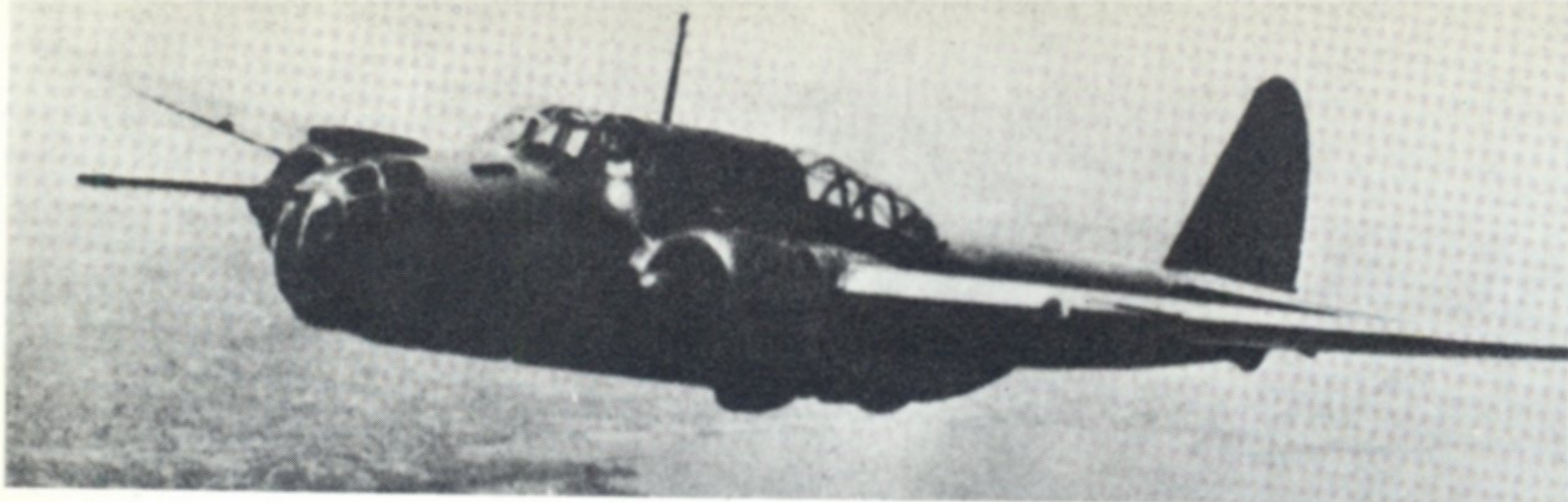


Ki.148 bomb load was 660 lb. bomb triggered on contact. Approximately 50 test bombs were expended in evaluation tests. (Mannosuke Toda via Bueschel)

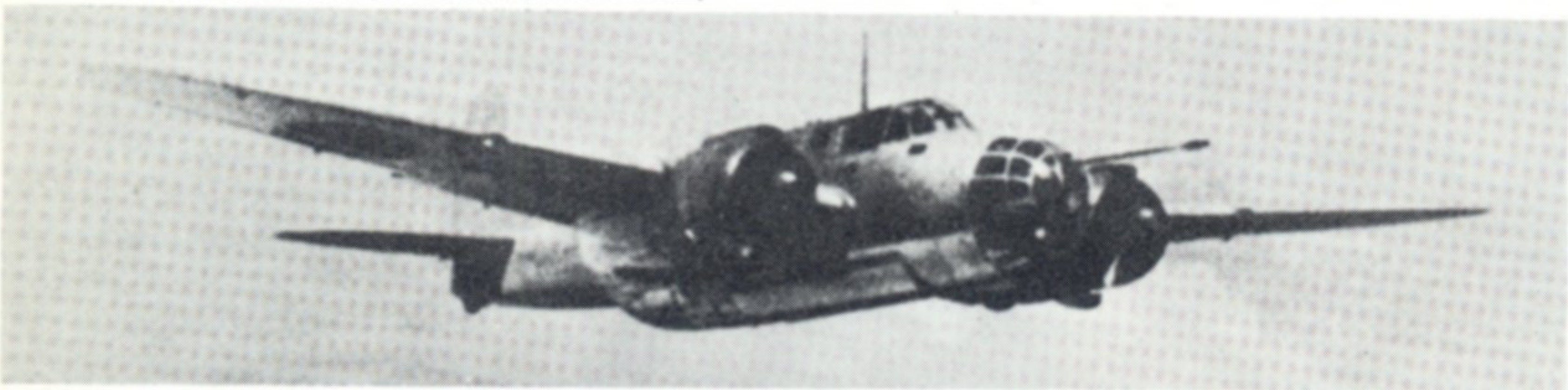


Kawasaki Ki.148 Type I-Go-b guided missile was intended as anti-invasion bomb for use against shipping. Power was a chemical rocket motor. (Sekai No Kokuki via Bueschel)





Above: Special Attack modification of the 99 Sokei was designed by the Army's Aeronautical Engineering Research Institute and modified at the 1st Army Air Arsenal late in 1944. (Sekai No Kokuki via Bueschel)



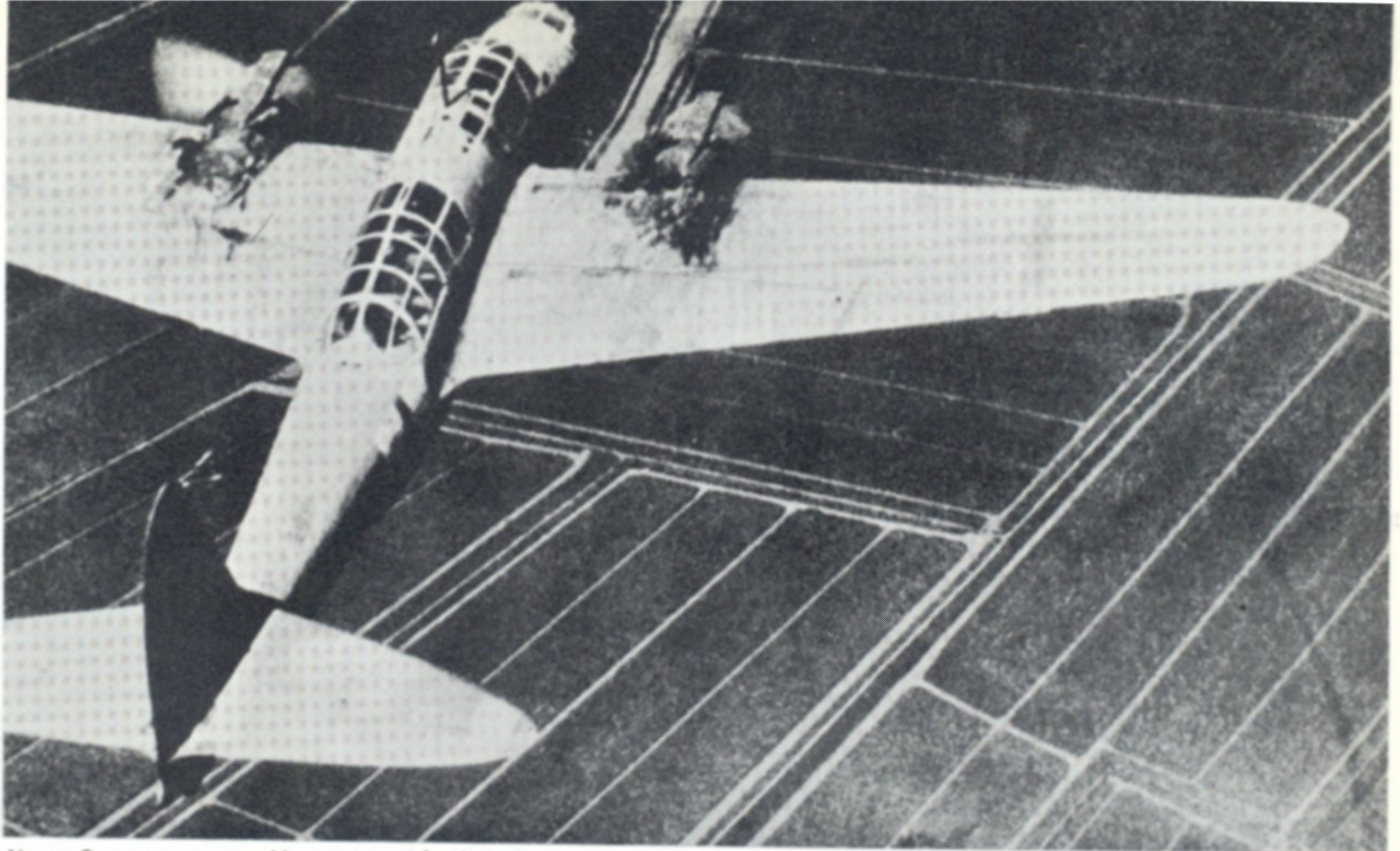
Above: Extended nose probe acted as trigger to explode 1,764 lb. bomb on contact. (Sekai No Kokuki via Bueschel)



Above: Three prototypes were built to Army specifications, with the first test flight on November 12, 1944. (Sekai No Kokuki via Bueschel)

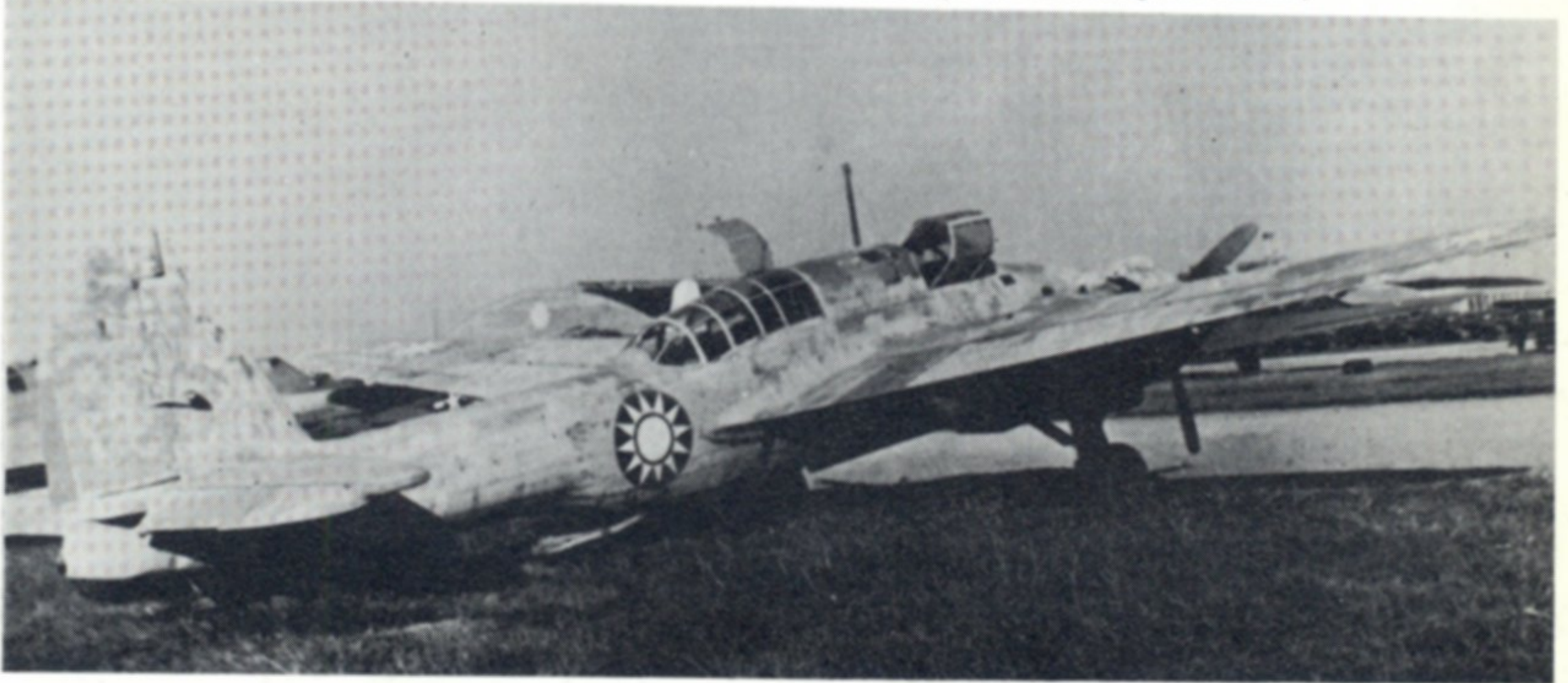
Below: Late 1943 experiment at Army Air Test Department at Fussa utilizes modified Ki.48-IIb as a test-bed for the Ne.00 turbojet. (Hideya Ando via Bueschel)





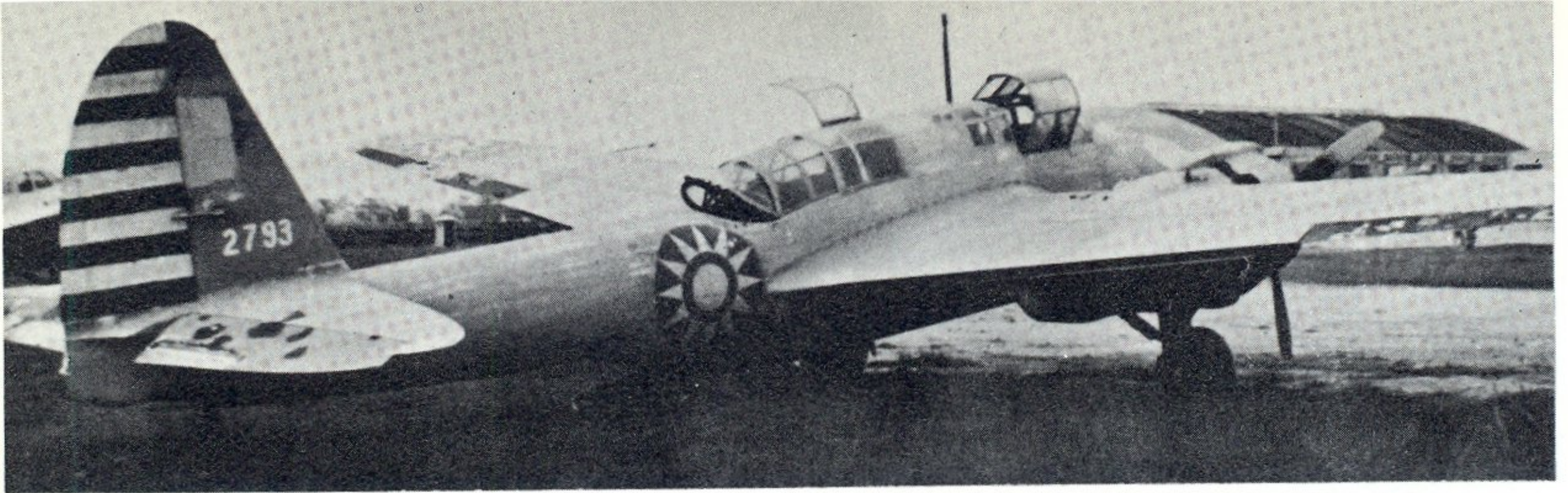
Above: Green crosses on white wings and fuselage denote post-war "White Flight" transport for communications use by demobilizing Japanese forces. Such use was terminated in mid-October 1945. (Mannosuke Toda via Bueschel)

Below: In serviceable condition, 99 Sokei bombers were briefly used by the Nationalists. (David C. Lucabaugh via Bueschel)

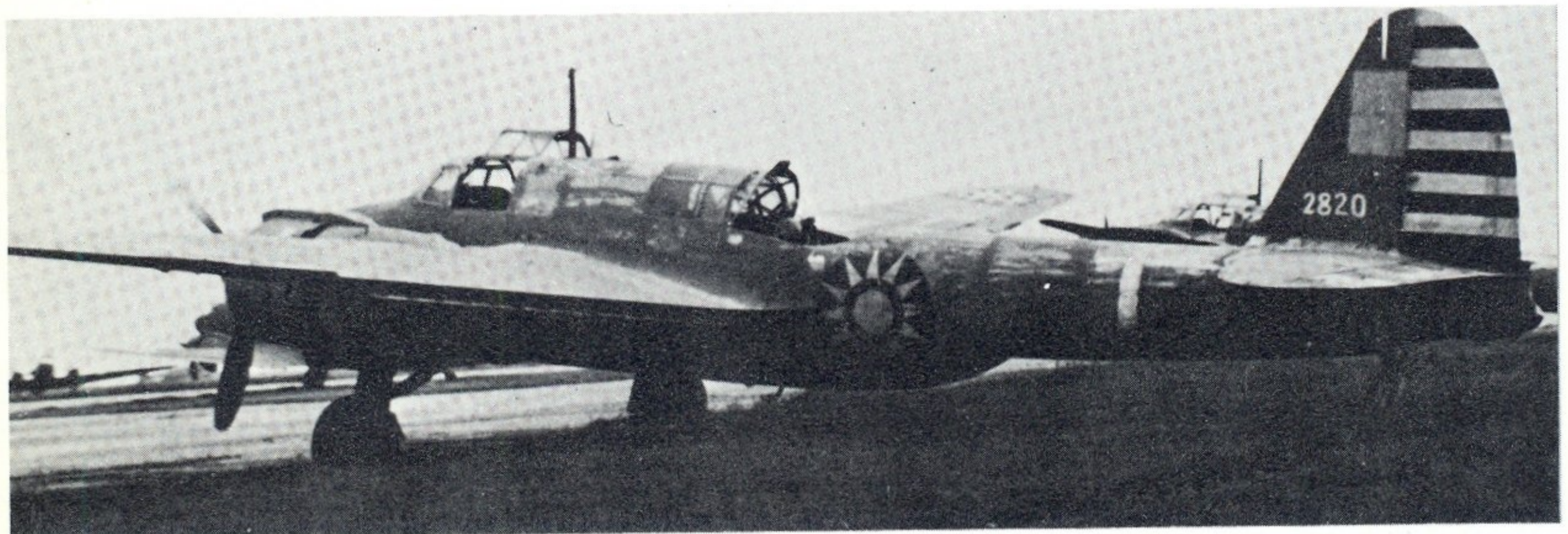


Below: Abandoned in China, Ki.48-IIb bombers were impressed into the Nationalist Chinese Air Force. (David C. Lucabaugh via Bueschel)





Above: Aircraft 2793 photographed at Nanking on August 22, 1946. Note large fuselage insignia. (David C. Lucabaugh via Bueschel)

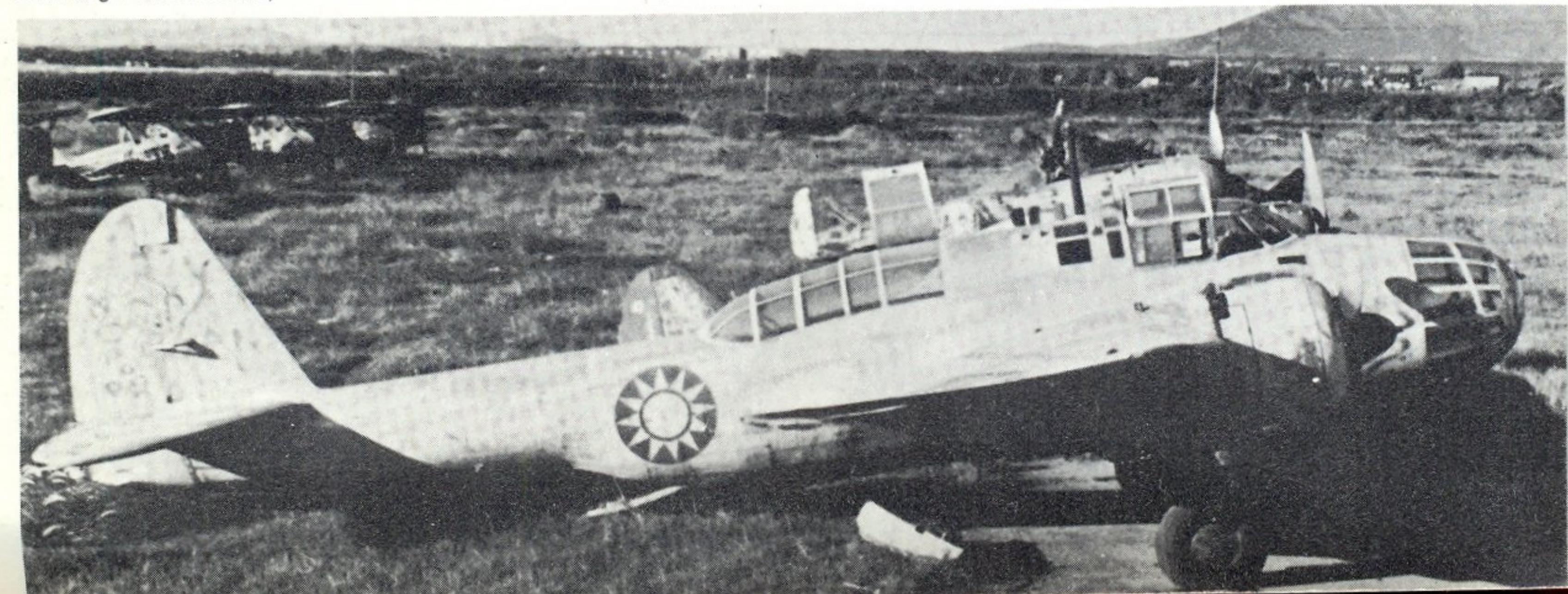


Above: 99 Sokei aircraft 2820 retains original Japanese white combat stripe on after fuselage. (David C. Lucabaugh via Bueschel)



Above: "Lily" bombers were also confiscated by the Chinese Red Army Air Force, and flown by students at the Chinese Communist Light Bomber Flying School at Harbin in Manchuria to be flown later in the Chinese Civil War. (David C. Lucabaugh via Bueschel)

Below: Line-up of Ki.48 "Lily" bombers and Ki.44 "Tojo" fighters at Nanking, August 1946. Ki.9 "Spruce" trainers in left background. (David C. Lucabaugh via Bueschel)



**JAPANESE ARMY AIR FORCES (JAAF)
UNITS OPERATING Ki.48 TYPE 99 TWO-ENGINE LIGHT BOMBER**

AIR COMBAT REGIMENTS:

Regiment	When used	Area of Operations	Former A/C	Later A/C	Comments
3rd Attack	June 1942– June 1945	Philippines · Kurile Islands Chishima · Philippines	88-II Ki.32	Ki.102	Home Islands unit to protect northern islands. Moved out of Kuriles as southern front deteriorated. Reinforced Philippines from Celebes in Oct.–Dec. 1944 as part of <i>Sho</i> Operations No. 1. Stationed in Batangas area. Unit disbanded at Noshiro, Japan in Sept. 1945.
6th Attack	1942–1945	China · Philippines Chosen (Korea)	Ki.10 Ki.30 Ki.32 Ki.51	None	China occupation force. Reinforced Philippines from Borneo in Dec. 1944 as part of <i>Sho</i> Operations No. 1. Stationed in Bacolod area, under 4th Air Army. Unit disbanded at Taikyū in Oct. 1945.
8th Light Bomber	Aug. 1941– 1945	Philippines · Burma Indo-China · Thailand	Ki.15 Ki.46	None	Assigned to 5th Air Army for operations against Philippines to open Pacific War. Transferred to Burma when Philippines invasion was completed. Remained in Burma, Indo-China, Thailand area. Officially disbanded at Heito, Japan in March 1946.
12th Light Bomber	April 1944– end of war	New Guinea · Philippines	Type I Ki.21 Ki.49	None	Originally a Heavy Bomber regiment reformed as Light Bomber in 1944, receiving Ki.48-II as original equipment. Officially disbanded at Heito, Japan in March 1946.
16th Light Bomber	1941–1945	Chosen (Korea) · China Okinawa · Philippines	Ki.30	Ki.67	Assigned to 5th Air Army for operations against Philippines to open Pacific War. First bombing unit to be based on Allied soil when elements of the 16th Light Bomber Regiment arrived at Aparri in the Philippines 14 December 1941 (Tokyo time). Active in the assault on Bataan. Became Heavy Bomber unit in 1945.
34th Light Bomber	Oct. 1942– April 1944	Indo-China · Burma Thailand · New Guinea	None	None	Unit formed at Phnom Penh in French Indo-China (Cambodia) in October 1942 with Ki.48 as original equipment. Moved to New Guinea by May 1943. Unit officially disbanded in July 1944 after the regiment was decimated in New Guinea.
35th Light Bomber	1942–1944	Indo-China	Ki.30 Ki.32	None	Companion unit to 34th Light Bomber regiment formed at Phnom Penh in French Indo-China (Cambodia).
45th Attack	July 1940– Feb. 1944	Japan · China Manchoukuo · Rabaul New Guinea · Negros	Ki.32	Ki.45 Ki.102	First unit to receive Ki.48, July 1940. Transferred to North China front Fall 1940. First spotted there by Chinese and American observers. Transferred from Manchoukuo to Rabaul Feb. 1943 via Japan and Truk. Converted to Fighter Regiment in Feb. 1944 flying Ki.45-Kai.
65th Light Bomber/ Attack	1940–July 1941	China	Ki.32 Ki.51b	Ki.43 Ki.45	Light Bomber regiment flying in China. Converted to Ki.48 late in 1940. Reorganized as Fighter regiment in July 1941.
75th Attack	1941–April 1945	China · Malaya Sumatra · Java New Guinea · Celebes Philippines · Japan	Ki.32	Ki.102	First operational in China. Assigned to 3rd Air Army for operations against Malaya to open Pacific War. Received Ki.102 to replace Ki.48 in April 1945.
90th Light Bomber	Oct. 1941– end of war	Indo-China · Malaya Sumatra · China Chosen (Korea)	Ki.30	None	Assigned to 3rd Air Army for operations against Malaya to open Pacific War. Reassignment to China was headquartered at Sainang, with bases at Kokyuko and Bushuo. Final assignment was Kunsan, Chosen (Korea) where unit was disbanded at end of war.
206th Light Bomber	June 1941– July 1941	Japan	Ki.15 Ki.30 Ki.36	None	Little known unit. Formed 1 March 1941 flying Ki.15, Ki.30 and Ki.36. Briefly flew test examples of Ki.48. Unit disbanded in July 1941 with elements reassigned to other units.
208th Light Bomber	March 1941– May 1945	Manchoukuo · Rabaul New Guinea · Philippines	None	None	Unit formed at Kairo, Manchoukuo in March 1941 with Ki.48 as original equipment. Light Bomber Training Regiment March 1941 to May 1942. Operationally flew Ki.48 from August 1942 to April 1944 in New Guinea. Arrived in Rabaul March 1943, moving to New Guinea in August. Unit disbanded at Tokorozawa in May 1945.

INDEPENDENT COMPANIES:

Company	When used	Area of Operations	Former A/C	Later A/C	Comments
82nd Light Bomber	1940-1942	China · Japan	Ki.30	None	Few independent Light Bomber companies existed as unit requirements called for more aircraft. Later incorporated into varied Light Bomber regiments.

INDEPENDENT HEADQUARTERS FLIGHTS:

Unit	When used	Area of Operations	Former A/C	Later A/C	Comments
21st Light Bomber	July 1939- 15 Oct. 1942	China · Japan	None	None	Headquarters command unit for Independent 82nd Light Bomber and 84th Fighter Companies. Organization deactivated in August 1943 with units assigned to regiments.

MISCELLANEOUS ASSIGNMENTS:

Unit	When used	Area of Operations	Former A/C	Later A/C	Comments
87th Fighter Air Combat Regiment	April 1944- end of war	Japan (Eastern Defence Sector)	Ki.44	None	Home defence fighter unit flying Ki.44 <i>Shoki</i> . Ki.48-II was used as command liaison for regimental Commander Major Mitake Sakamoto. Assigned to 1st Company.
Flight Test Dept. (Fussa)	July 1940- October 1942	Fussa, Japan	All current JAAF aircraft	All current JAAF aircraft	Original testing of Ki.48 prior to JAAF assignment and production
Army Air Test Dept.	October 1942- end of war	Fussa, Japan	All current JAAF aircraft	All current JAAF aircraft	Test flying section at Fussa with group of pilots assigned to Light Bombers and variants, including Special Attack. Ki.48 testing was under direction of Major Hideo Sakamoto.

TRAINING SCHOOLS:

School	When used	Area of Operations	Former A/C	Later A/C	Comments
Hokota Army Light Bomber Flying School	July 1940-	Hokota, Japan	Ki.30	Ki.51	Primary Ki.48 Light Bomber training school set up for unit training and conversion to operational status.

SPECIFICATIONS: KAWASAKI Ki.48 TYPE 99 TWO-ENGINE LIGHT BOMBER 99 SOKEI

NOTE: All dimensions in original Japanese metric. Dimensions and climb in metres (m), weights in kilograms (kg), distances in kilometres (km) and speeds in kilometres—per-hour (km/hr.). Data in parenthesis are estimates or approximate.

*Stabilizer positions varied.

**Tail configurations varied.

***Total Model Ia and Ib production.

†Some models had enclosed Watter Cowlings.

††Some models had dorsal fin.

†††All production models IIa, b & c.

Model and Specs.	Ki.48 Prototypes	Ki.48 Pre-production	Ki.48-Ia	Ki.48-Ib	Ki.48-II Prototypes	Ki.48-IIa	Ki.48-IIb	Ki.48-IIc
Span (M)	17·47	17·47	17·470	17·470	17·470	17·470	17·470	17·470
Length (M)	12·60	12·60	12·60	12·60	12·75	12·76	12·76	12·76
Height (M)			4·38	4·38	3·80	3·80	3·80	3·80
Wing Area (M2)			40·00	40·00	40·00	40·00	40·00	40·00
Weight Empty (kg)			4,050			4,550	4,550	
Weight Loaded (kg)			5,900			6,750	6,500	
Weight Loaded Max. (kg)			6,050				6,750	
Max. Speed (km/hr.)			480/3,500m			505/5,600m	505/5,600m	
Cruising Speed (km/hr.)			350/3,500m					
Climb (m/min.)			5,000/9'00"	5,000/9'00"		5,000/8'30"	5,000/8'30"	
Armament—M.G. (mm)			3 x 7·7	3 x 7·7	3 x 7·7	3 x 7·7	3 x 7·7†	3 x 7·7
Armament—Cannon (mm)								1 x 12·7
Armament—Bombs (kg)	24 x 15 or 6 x 50	24 x 15 or 6 x 50	24 x 15 or 6 x 50	400	500	500	800	500
Engines	2	2	2	2†	2	2	2	2
Power Unit—Mfr.	Nakajima	Nakajima	Nakajima	Nakajima	Nakajima	Nakajima	Nakajima	Nakajima
Type	Ha.25	Ha.25	Ha.25	Ha.25	Ha.115	Ha.115	Ha.115	Ha.115
H.P.	990	990	1,000	1,000	1,130	1,130	1,130	1,130
Crew	4	4	4	4	4	4	4	4
Aircraft—Mfr.	Kawasaki	Kawasaki	Kawasaki	Kawasaki	Kawasaki	Kawasaki	Kawasaki	Kawasaki
First Built	July 1939	Sept. 1939	July 1940	April 1941	Feb. 1942	April 1942	Jan. 1943	Aug. 1943
Number Built	4*	5**	557***	557***	3	1,408†††	1,408†††	1,408†††

Hokota Light Bomber Instructing Flight Division	20 June 1944– 10 July 1945	Hokota, Japan	None	Ki.54 Ki.84 Ki.45	Reorganization of Hokota Army Light Bomber Flying School. Continued Ki.48 unit training. Portion reassigned as 26th Flight Group.
Mito Army Flying School	1940–1943	Mito, Japan	Ki.30 Ki.51	None	Light Bomber flying school. Flew a variety of JAAF Light Bomber and Army Co-op types in training.
Army Aviation Maintenance School	1940–June 1943	Tokorozawa	All current JAAF aircraft	All current JAAF aircraft	Initial maintenance and repair training school for Ki.48.
Tokorozawa Army Aviation Maintenance School	June 1943– end of war	Tokorozawa	All current JAAF aircraft	All current JAAF aircraft	Reorganized Army Aviation Maintenance School. Became Tachikawa Instructing Maintenance Division in June 1944.

FOREIGN SERVICE:

Country and Unit	When used	Area of Operations	Comments
Republic of China Air Force (Nationalist China)	Sept. 1945–1948	China	Numerous examples captured by Nationalists at Nanking, Hankow and other locations throughout Central and Southern China.
Red Army Air Force (Communist China)	Oct. 1945– July 1946	Manchuria · North China	Former JAAF aircraft acquired in Manchuria (Manchoukuo) and North China by the Chinese Red Army. Flown by Red Army Air Force until Chinese Communist military forces were reformed in July 1946.
People's Liberation Army Air Force (Communist China)	July 1946–1949	North China · Central China	People's Liberation Army Air Force formed in July 1946. Sporadic use of Ki.48 in Chinese Civil War, 1946–1949.
Indonesian People's Security Force	Sept. 1945–1949	Dutch East Indies Indonesia	Former JAAF aircraft. Flown by Indonesian Nationalist pilots and mercenaries against Netherlands East Indies Air Force. Aircraft were repaired and reassembled from aircraft in JAAF dump near Batavia (Djakarta).

NOTE: These lists are not to be regarded as complete, as only those units for which Ki.48 use has been confirmed have been identified.

† Test models fitted with dorsal turret mounting 1 x 12.7mm in addition to 2 x 7.7mm.
 †† Dive Bomber version with dive brakes included in Ki.48-IIb production.
 ††† Missile Launch aircraft for Ki.148.

Ki.48-IIId	Ki.48-IIe	Ki.48-IIb Prototypes	Ki.48-IIb Dive Bomber	Ki.48-IIb-Kai	Ki.48-IIb-Kai "Parent"	Ki.48-IIb-Kai Special Attack	Ki.81	Ki.174
17-470	17-470	17-470	17-470	17-470	17-470	17-470	17-470	17-470
12-76	12-76	12-75	12-75	12-75	12-75	(14-50)	12-75	12-75
3-80	3-80	3-80	3-80	3-80	3-80	3-80	3-80	3-80
40-00	40-00	40-00	40-00	40-00	40-00	40-00	40-00	40-00
3 x 7.7 1 x 12.7	3 x 7.7 1 x 12.7	—	—	—	—	—	3 x 7.7 2 x 12.7	—
500	500	—	—	—	1 x Ki.148	1 x 800	—	1 x 800
2 Nakajima Ha.115	2 Nakajima Ha.115	2 Nakajima Ha.115	2 Nakajima Ha.115	3 Nakajima Ha.115 & Ne.O Jet	2 Nakajima Ha.115	2 Nakajima Ha.115	2 Nakajima Ha.115	2 Nakajima Ha.115
1,130 4	1,130 4	1,130 3	1,130 3	1,150 plus 4	1,130 3	1,130 2	1,130 4	1,130 1
Kawasaki Late 1943 Unknown	Kawasaki Early 1944 Unknown	Kawasaki Spring 1942 2††	Kawasaki Early 1943 Unknown††	Kawasaki August 1943 1	Kawasaki July 1944 4†††	Kawasaki 12 Nov. 1944 3	Kawasaki 1943 None	Kawasaki — None



A3/4/5
Upper surfaces,
brown spinners on A3.

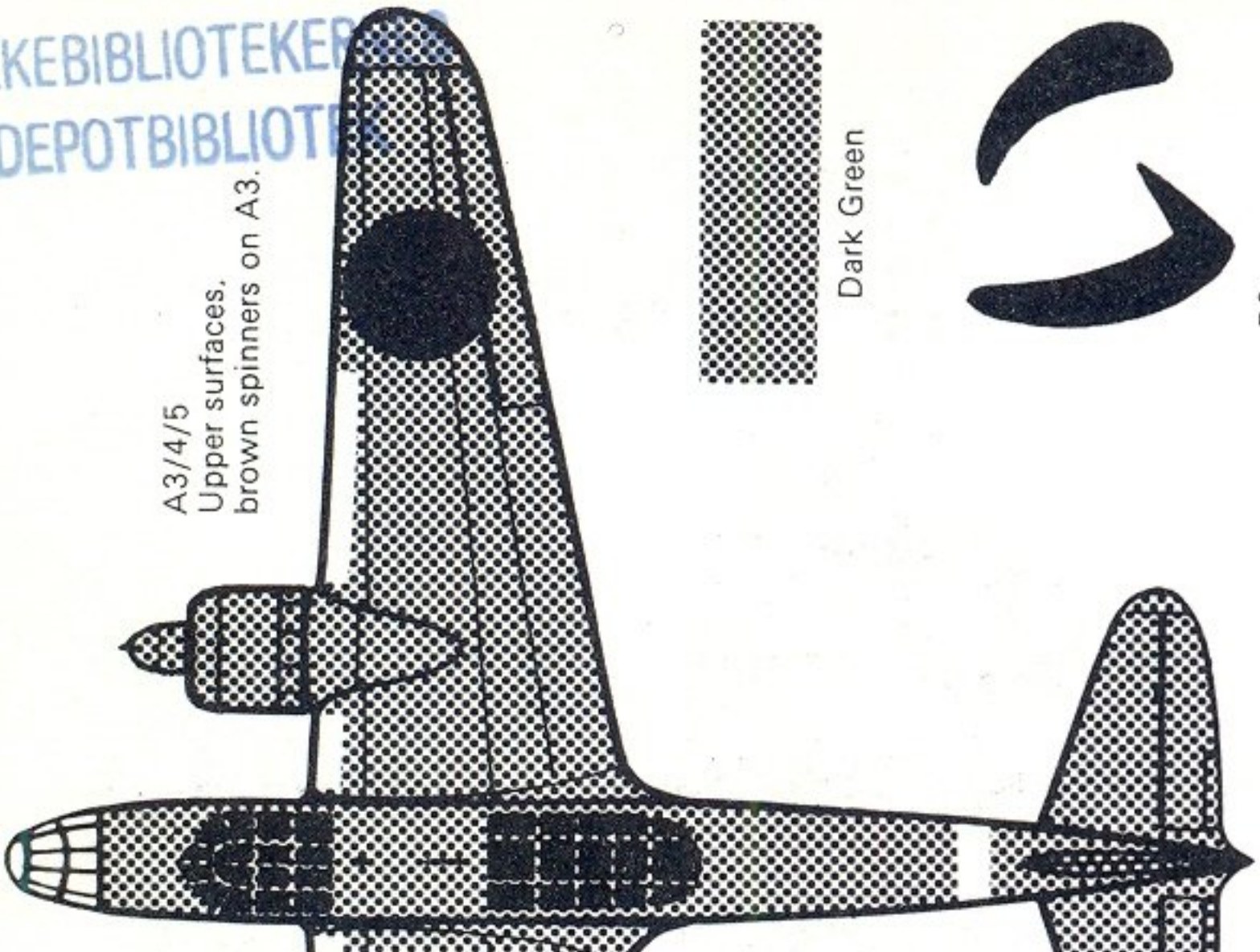
Note:
Yellow leading edge
stripe shown in white.



A1
Upper surfaces

FC1
Upper surfaces,
under surfaces
pale gray green.

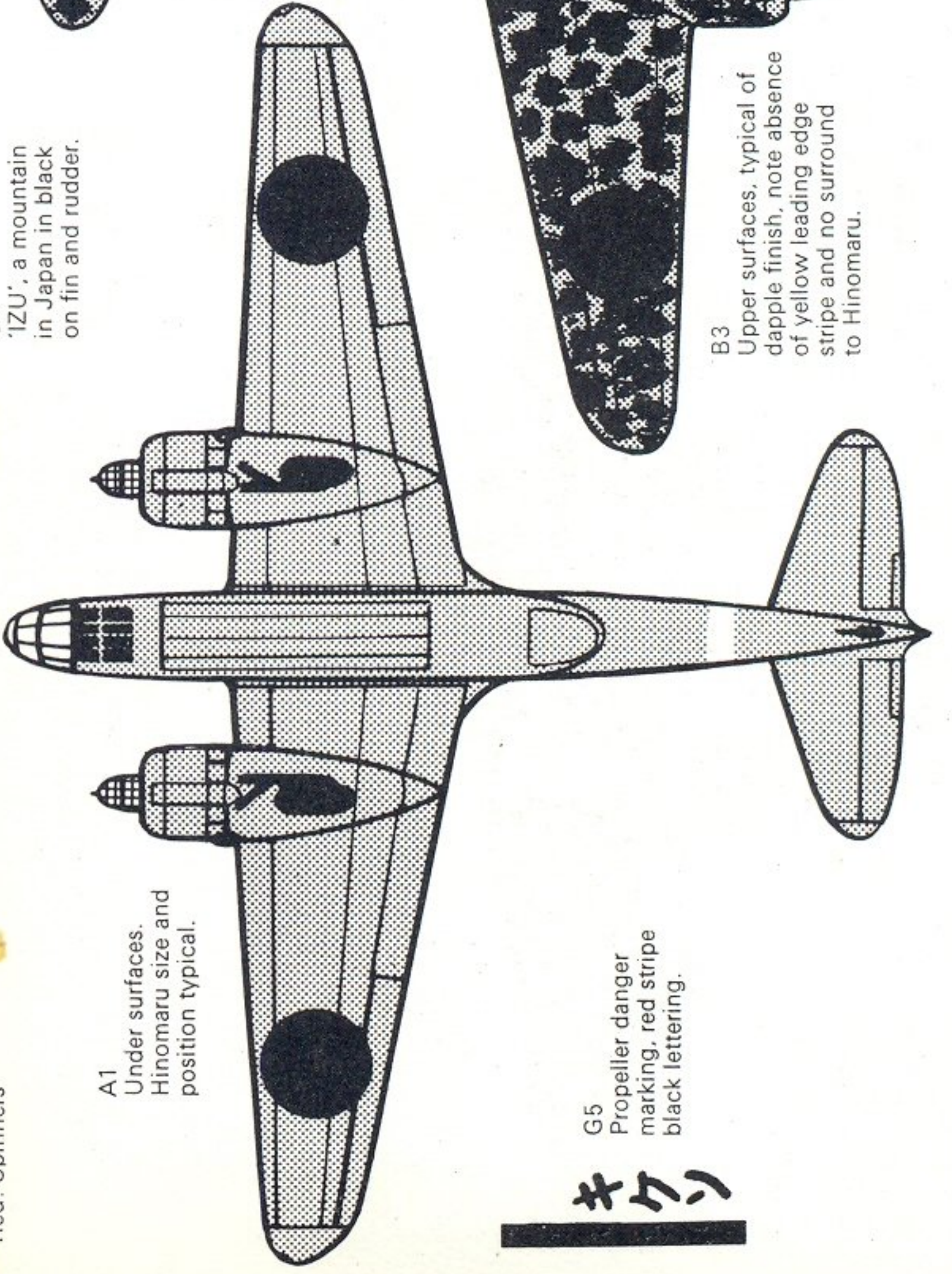
いさ



Dark Green



B2
Individual marking
in white on fin.



A1
Under surfaces.
Hinomaru size and
position typical.

G5
Propeller danger
marking, red stripe
black lettering.

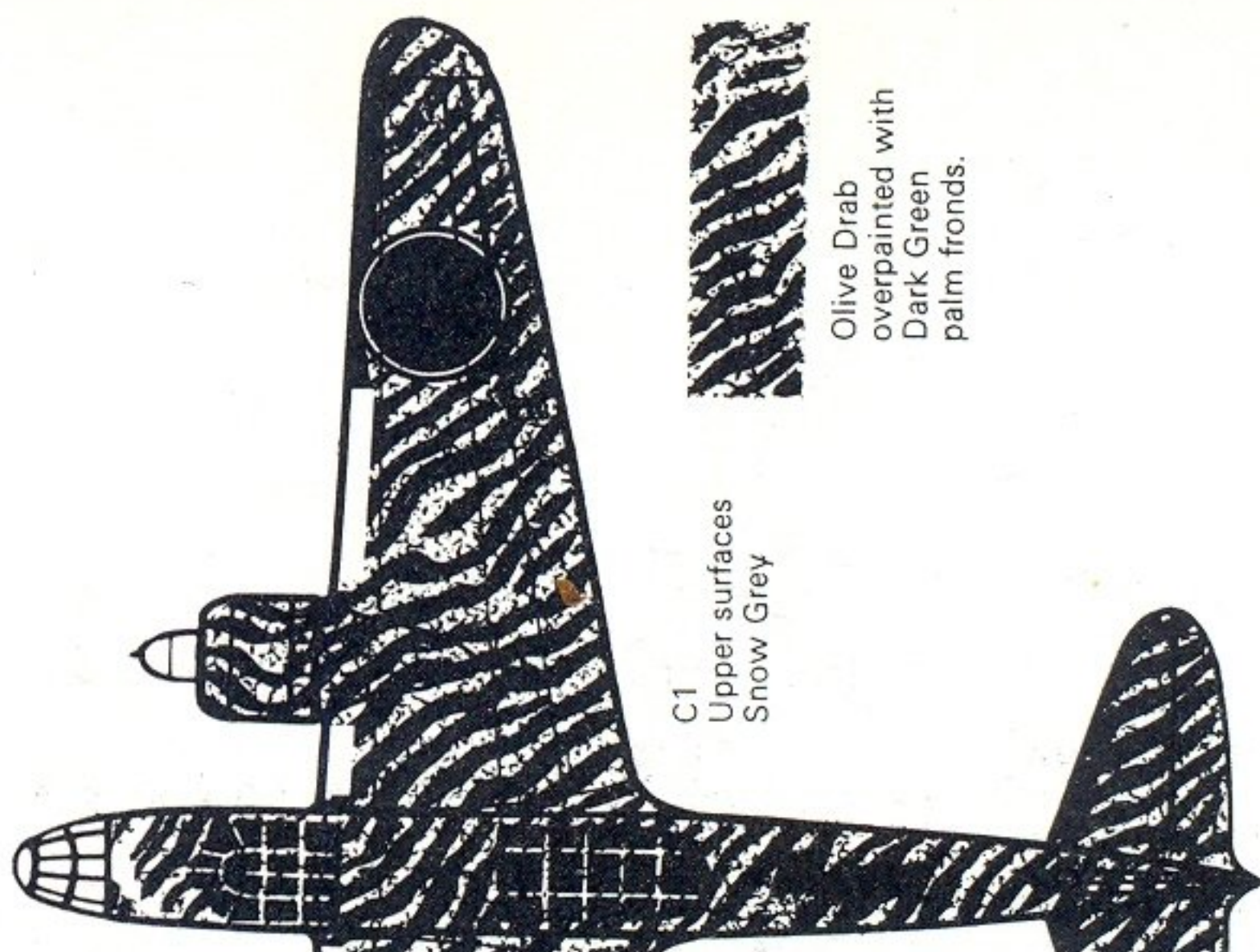
キタ



Pale Green Grey
overpainted
with Dark Green palm fronds.



Pale Green Grey



C1
Upper surfaces
Snow Grey

Olive Drab
overpainted with
Dark Green
palm fronds.

C4
Individual marking
in white on rudder.

つと

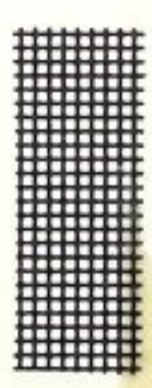
B3
Upper surfaces, typical of
dapple finish, note absence
of yellow leading edge
stripe and no surround
to Hinomaru.



Snow Grey

はこ

C5
Individual marking
in white on rudder.



Red: Spinners



Natural metal with Green dapple



B5 Upper surfaces

北斗

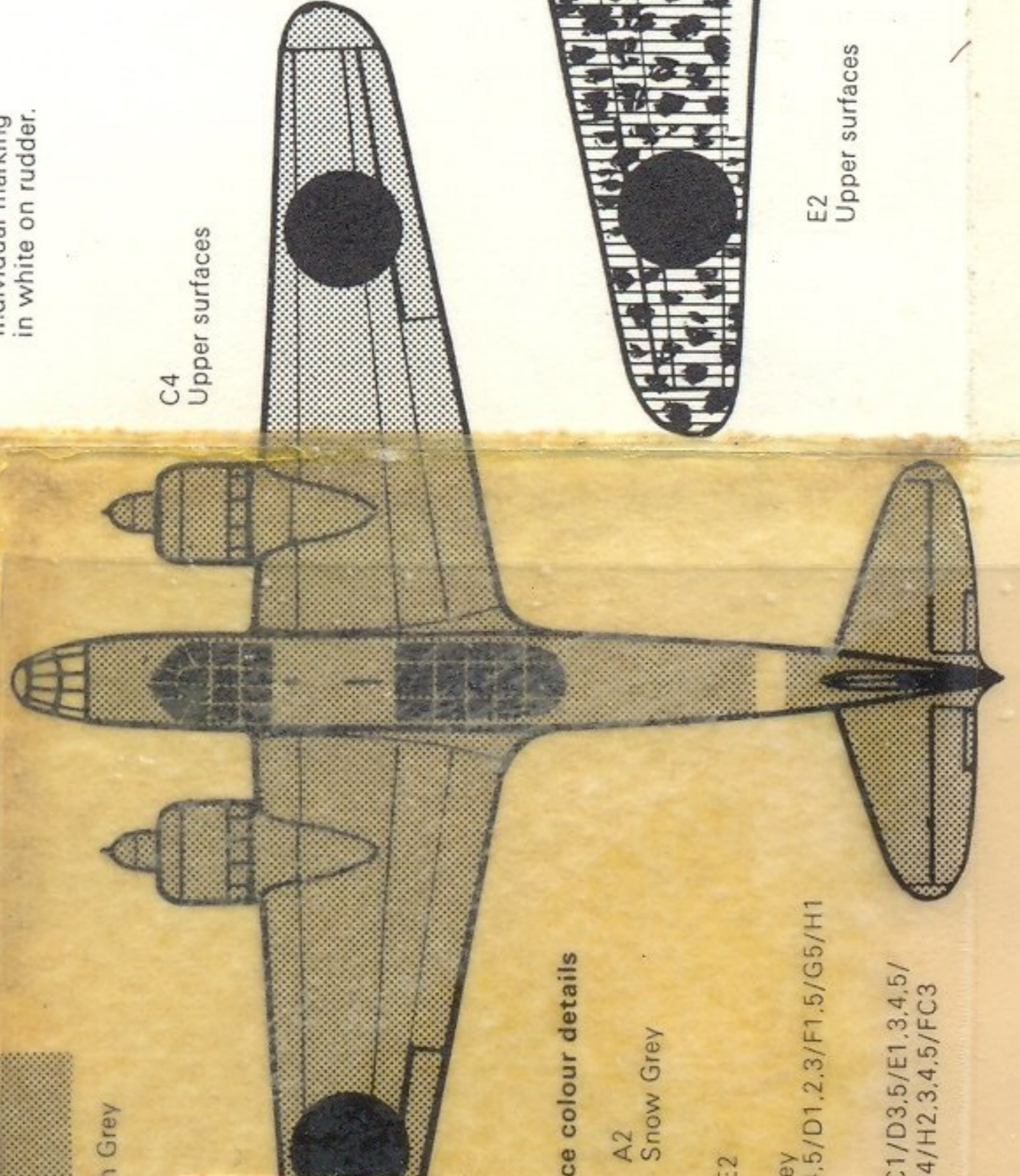
D5 Individual marking in red at bottom of rudder.



Brown: Spinners



Pale Green Grey



C4 Upper surfaces

Ice colour details

A2 Snow Grey

E2

E1 4.5/D1.2.3/F1.5/G5/H1

C1/D3.5/E1.3.4.5/4/H2.3.4.5/FC3

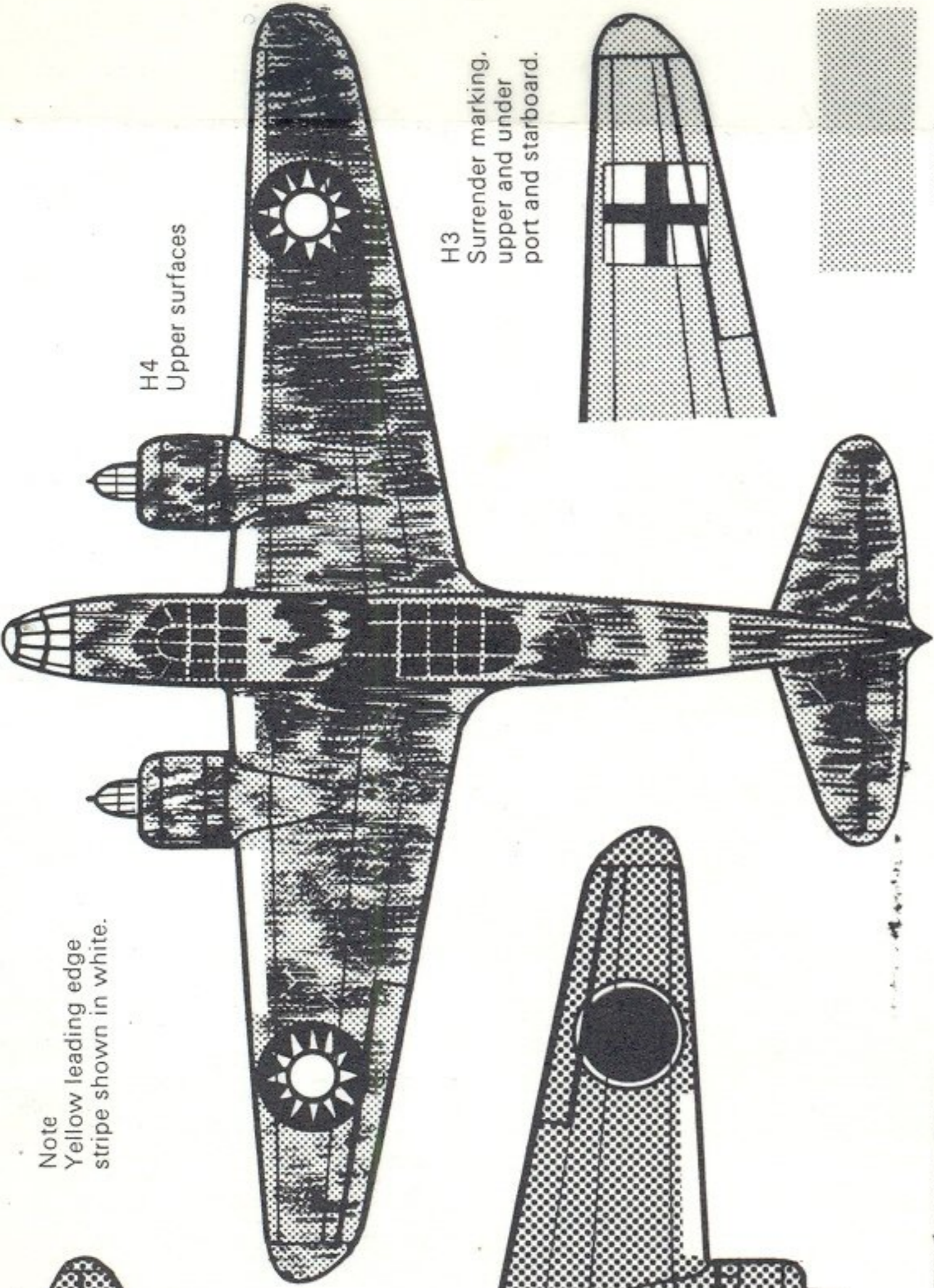
Note
Yellow leading edge stripe shown in white.



D1 Individual marking in white on rudder.

とぎろ

Fredenberg-Humboldt
Bibliotek



H4 Upper surfaces

H3 Surrender marking, upper and under port and starboard.



Light Grey



H5 Upper surfaces

Light Grey with Drab Green dapple

Light Grey

Natural metal with brown dapple



E2 Upper surfaces

Kawasaki Ki-I/II Sokei in Japanese Army Air Force, CNAF and IPSF Service

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Netherlands East Indies Air Force
West German Luftwaffe

Front cover, top to bottom:

Ki.48-Ib, 8th Light Bomber Air Combat Regiment, 1st Company, Burma. June 1942.
Ki.48-IIb, 208th Light Bomber Air Combat Regiment, 1st Company, New Guinea. April 1944.
Ki.48-IIb, Chinese Nationalist Air Force, Nanking, China. August 1946.