

Kawasaki's engineers spread their wings

The most complete example of a Kawasaki Ki-61 'Hien', on public display for decades, has been restored by its manufacturer. Engineers from Kawasaki Heavy Industries (KHI), who work in the same factory that built the engines for the Ki-61, but now build motorcycle engines, volunteered their time to work on the former Imperial Japanese Army fighter.

The aircraft is a variant of the Ki-61-II, the high altitude interceptor developed from the original design. As a Ki-61-II-Kai (No. 5017), it was powered by a Kawasaki Ha-140 (a licence-built DB-605). Considering the type was the only mass-produced Japanese fighter with an inline engine, and this example is a variant of which only thirty were built, it is an incredibly rare aircraft that was thoroughly deserving of a detailed restoration.

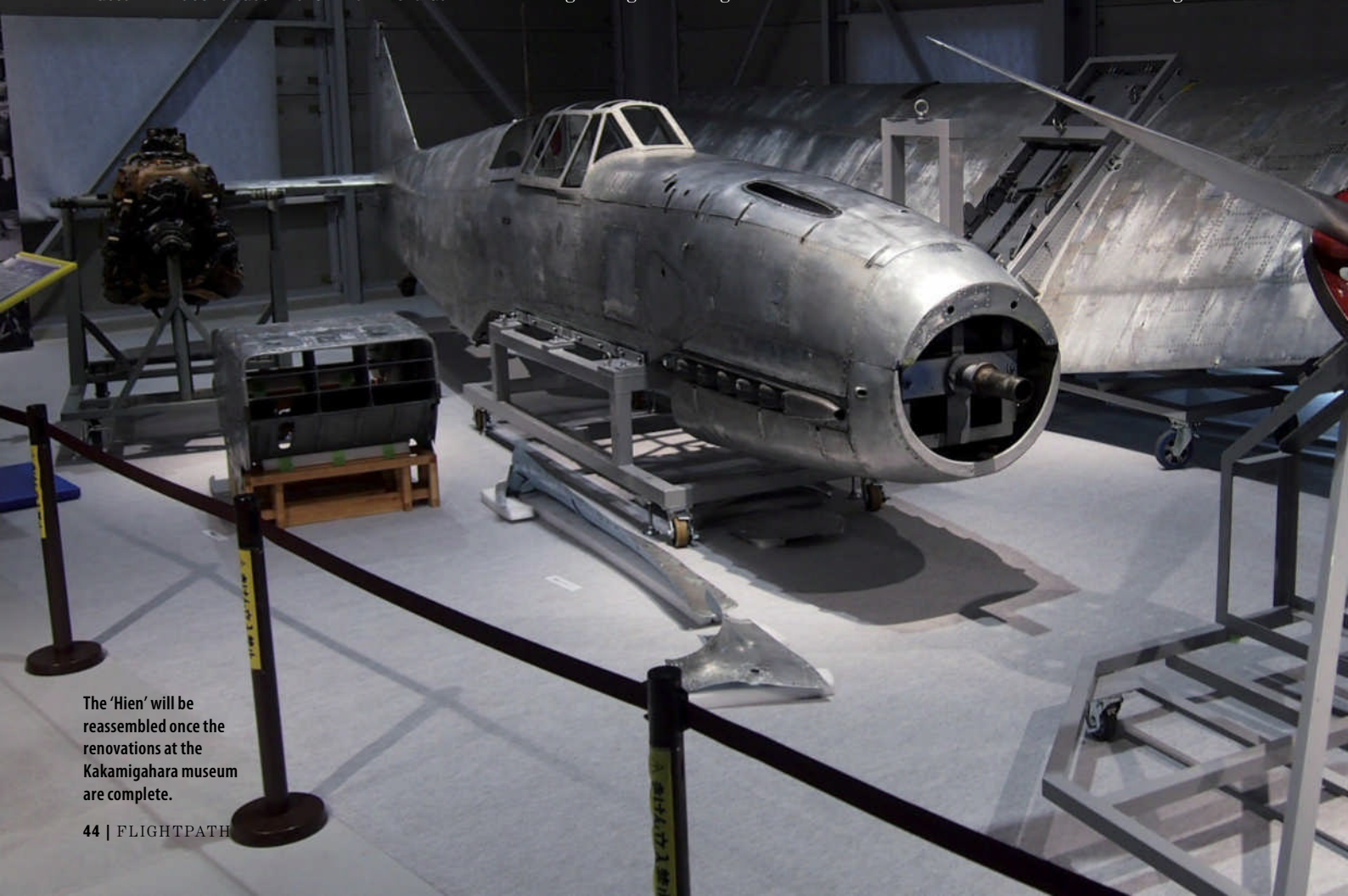
Found at Itami Air Base by American troops at the end of the war, remarkable research by Don Marsh and Jim Long has pieced together the often confused history of this rare machine. It is likely 5017 was issued by the Japanese army officials to the Army Air Technical Evaluation Department at Fussa Air Base for use in the Ki-61-II evalua-

tion program, and there is no evidence that it served with the 56th *Hikoh Sentai*, despite statements to that effect. It was placed as a gate guard with the new U.S. owners at Fussa Air Base, and it underwent a number of repaints (including into U.S. markings) and minor works there until, in 1953, the aircraft was gifted back to the Japanese people. Often, again, this is confused with its 'being returned from the USA', though it actually never left Japan. It was damaged when moved to Hibiya Park in Tokyo near the Imperial Palace, and underwent a restoration in 1964 to be displayed with the 'Guam Zero' (Model 52 No. 4685) at Japanese Self Defense Forces base Iruma on 3 November 1964, before finally coming to rest at the *Chiran Tokkoh Heiwa Kaikan* (Chiran Special Attack Peace Assembly Hall).

In 2014 Kawasaki approached the owner of the 'Hien', Japan Aeronautic Association, to propose the restoration. The aim was to return the aircraft to as close to its original wartime configuration as possible. The engine would not require an overhaul, thereby preserving any originality that remained, as there was no intention of returning the fighter to flight.

The project began at Kawasaki's Gifu factory in September 2015 after the airframe was transported from the Chiran facility in Kagoshima Prefecture. The paintwork was stripped and found to be hiding a multitude of sins as vast amounts of automotive body putty were also removed. The aircraft was then surveyed, scanned and measured to enable components to be restored or repaired faithfully or, at least, replicated as per original documentation. With few original drawings and documents left in the Kawasaki archives, the project team cast its net far and wide and began to collect documentation that is as rare as the 'Hien' itself.

Analysing the real thing is just as important as having the right paperwork to work from. For an aircraft as rare as the Ki-61, with no other complete airframes extant (see page 46), the team travelled to the U.K. to survey the next best thing. The Ki-100 held by the RAF Museum at Cosford is the only one of its type left. Due to reliability issues with the Ha-140 inline, 275 Kai airframes were fitted with the Mitsubishi Ha-112-II radial and became Ki-100s. While the Cosford machine was not originally built as a Ki-61, being a new build Ki-100 I-Otsu with a cut-down rear fuselage for better

A detailed photograph of a Kawasaki Ki-61 'Hien' fighter aircraft on display in a museum. The aircraft is a silver-colored metal, showing its sleek, aerodynamic design. It is mounted on a metal support structure. In the background, other parts of the aircraft, including a large radial engine, are visible on display. The floor is polished and reflects the lights. A black stanchion with a yellow tape is in the foreground, indicating a restricted area.

The 'Hien' will be reassembled once the renovations at the Kakamigahara museum are complete.

visibility, it is as close as one could hope for in a world almost bereft of complete Japanese wartime aircraft.

Based on the results of this dedicated and comprehensive research, twenty major components, ranging from lights to the radiator and engine panels, were built from scratch, mostly finally replacing missing elements. Eighty percent of the cockpit instruments are as per the original fit out. Replicas were made, based on original documentation, for instruments that could not be sourced.

After a year of hard work, the fighter was displayed at the Port Terminal Hall in Kobe from 15 October to 3 November 2016 as part of Kawasaki's 120th anniversary exhibition. The Ki-61 was then disassembled into its major structures and transported to Kakamigahara Aerospace Science Museum in Gifu Prefecture, central Honshu. The museum is currently under renovation and will not re-open until spring 2018 so the 'Hien' remains in a disassembled state in a storage hangar. Upon completion of the museum's renovations, this amazing survivor will be reassembled for permanent exhibition.

Hikaru Tomita and Andy Wright



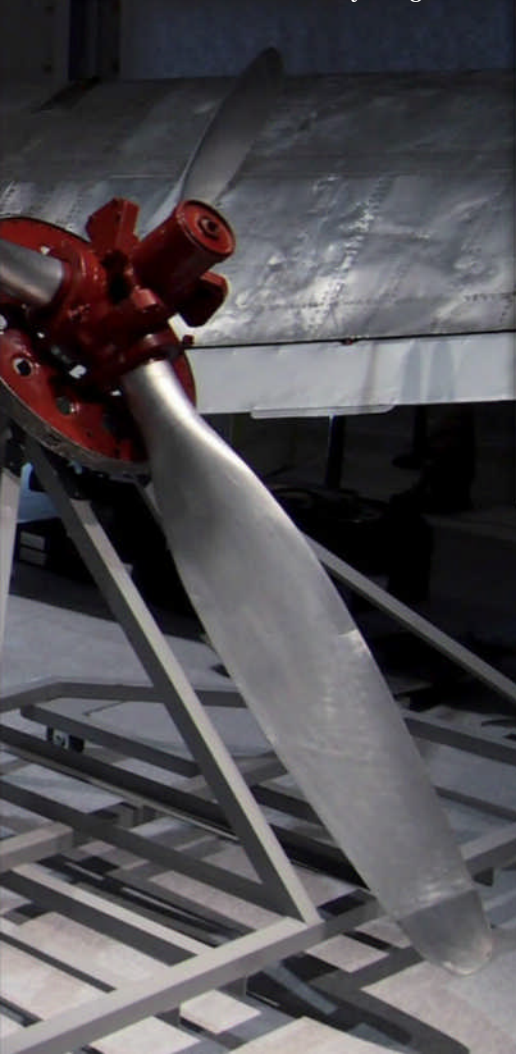
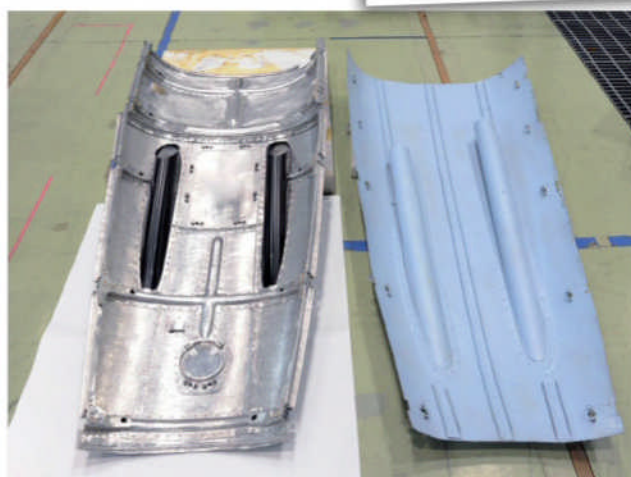
ABOVE: The Ki-61 on display in Kobe. Note the supercharger (the black object behind the radio mast) and the radiator behind the port wing. Both were built from scratch. [All images via KHI with thanks to Japan Aeronautic Association]

RIGHT: What couldn't be sourced was recreated. Note the mix of original and newly built components.



LEFT: Upper engine cover – new vs. old. The side covers form part of the engine bearers so only the top and bottom covers can be removed for maintenance.

BELOW: An exceptionally sleek-looking machine, it is easy to see why Allied pilots, on first seeing a Ki-61, thought they were engaging something of German or Italian origin.



The Mysterious Kawasaki Ki-61 Survivors



Contributing Editor *James Kightly* attempts to unravel the identities and stories of the surviving Ki-61 'Hien' fighters.

As outlined by Michael J Claringbould elsewhere in this issue, the Kawasaki Ki-61 Hien ('flying swallow', Allied reporting name 'Tony') was a comparatively rare type in relative numbers even in W.W.II. Even rarer, and included here, is the radial-engine development, the Kawasaki Ki-100 Type 5 Fighter (Go-shiki sentouki, or Goshikisen). No code name was allocated, as it was unknown to the Allies until after the war.

During W.W.II captured 'Tonys' were prized, including one acquired by the Technical Air Intelligence Unit (TAIU) in Brisbane, Australia. This 'Tony' was shipped to U.S. Naval Air Station Anacostia, Washington, DC, later in 1944. Another example taken to the U.S. (and pictured here) was lost in an accident before the war's end, a not unusual fate of exotic foreign types vulnerable to the inherent problems of operating such machines. Several examples were also found after the Japanese surrender, or as the Allies advanced, and several were temporarily made airworthy.

In the early years of preservation, during the 1960s and 70s, according to Leslie Hunt's researches, only two Ki-61 'Tonys' and a single Ki-100 were known. One of the then-unidentified Ki-61s was listed as being at the Kotsu Transportation Museum, Kanda, in the Tokyo district, and the other at the Johnson Air Base, Iruma, Saitama Pre-

fecture. This latter example survived, while the Kanda machine was to disappear after the museum closed. Geoff Goodall's modern directory lists eleven known Ki-61 identities, consisting in some cases only of major airframe 'chunks', of which three relatively complete Ki-61 airframe projects currently exist, and the one Ki 100.

The most prominent survivor is the Ki-61-II-Kai No.5017. The much travelled machine, listed at Iruma above, is now stored, pending permanent display, while the Kakamigahara Aerospace Science Museum undergoes renovations (see page 44).

Once at Wangaratta

Kermit Weeks' Fantasy of Flight museum has a Ki-61 project, which combines the best major airframe pieces of three New Guinea wrecks. The type's one-piece wing comes from a Ki-61-I Ko (Ki-61-Ia) with construction number 292; the fuselage comes from Ki-61-I Ko c/n 379; and the tail unit comes from Ki-61-I Otsu (Ki-61-Ib) c/n 640. Two more aircraft donated parts to it. They are Ki-61-I Ko c/n 402, which gave up its ammo bay covers, while Ki-61-I Otsu c/n 447 supplied the fuselage hatch.

Jerry Yagen's Military Aviation Museum in Virginia Beach, Virginia, USA, has Ki-61-I-Otsu, c/n 640, but note the tail above! For a number of years it was also under rebuild to flying condition at Precision Aerospace,



LEFT: One of the captured Ki-61 fighters, here under test by the U.S. Navy Naval Air Test Center Patuxent River, Maryland, in June 1945. [Official U.S. Navy photo 80-G-333777]

RIGHT: The most complete, original survivor, Ki-61-II-Kai, No.5017, seen when at Yokata, Tokyo, on the U.S. air base. [via Dwight Turner]

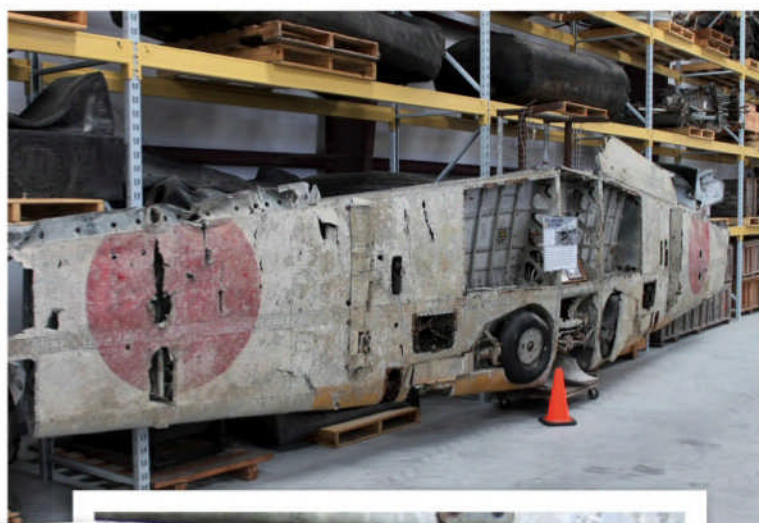
BELOW: A Ki-61 Hien of 149th Shimbu Unit at Ashiya airfield in Fukuoka, Japan, in 1945. [U.S. Navy National Museum of Naval Aviation photo No. 1996.488.159.024]



LEFT: Illustrating the exfoliation and corrosion that restorers have to deal with in this aircraft, is this wing structure piece, good only as a pattern. [J Kightly]

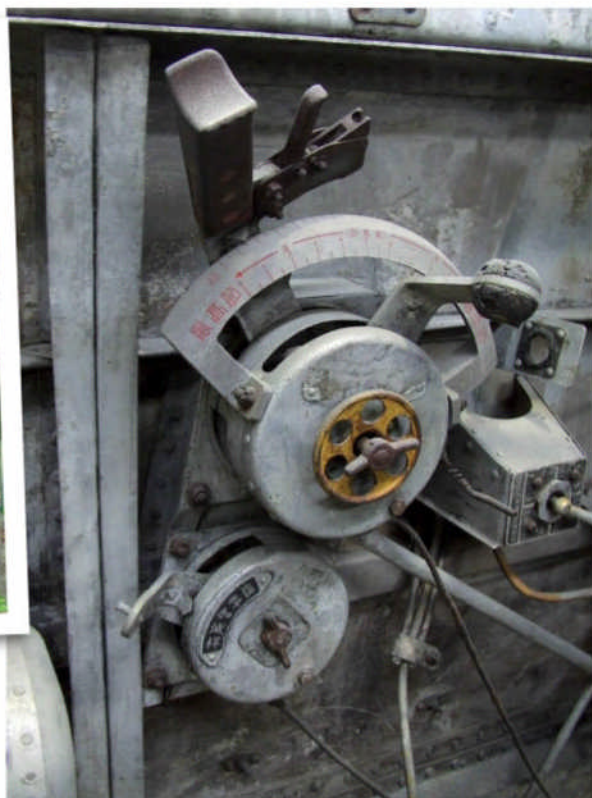
RIGHT: The Fantasy of Flight wing when in store in Florida. [Steve Nelson]

BELOW: While at first glance identifiable as an aircraft, this cut-short fuselage has clearly been almost completely robbed out. Seen here at Wangaratta in 2005. [J Kightly]



RIGHT: Still with some of the red paint, and even more importantly, placards and engravings, is this Ki-61 throttle unit. [J Kightly]

LEFT: Three Ki-61 projects when seen together at the now-defunct Precision Aerospace, Wangaratta, Victoria. [J Kightly]





Wangaratta, Victoria, but the project has moved on with the changes of ownership at that location, and the project is to be completed by Pioneer Aero at Ardmore, New Zealand. When still trading in the early 2000s, Precision Aerospace also had the remains of Ki-61-I Ko c/n 299. Intended as a non-flying restoration, for the Papua New Guinea Museum, it was loaned for assistance in the airworthy aircraft on the basis that it would be statically restored and returned to the museum.

More recently, *Flightpath* correspondent John Parker reported in 2015: "The Historic Aircraft Restoration Society's associated organisation, Historic Aircraft Restorations Limited, both in Albion Park, New South Wales, Australia has several of these ultra-rare aircraft awaiting their turn in the restoration chain. One fuselage is already structurally completed and on display in the HARS foyer alongside a recovered wreck. There are several restorable engines in the collection too."

One One Hundred

And one Ki 100. Interestingly no less than three Ki-100 aircraft were in the U.S. in 1946, of the 275 conversions made from the Ki-61. None of these survived. The sole survivor, Ki-100-1b C/No 16336, was found at Tan Son Nhut airfield Saigon, Vietnam. Test flown by a Japanese pilot there, it was ferried to Bien Hoa to commence a flight test program for the Allied Technical Air Intelligence Unit (ATAIU). Damaged there, it was repaired with parts from other aircraft on the airfield, including an oil cooler from a Nakajima Ki-84 'Frank' and the propeller from a Mitsubishi Ki-46 'Dinah'. In 1946 it was shipped to Britain for the Ministry of Aircraft Production Air Intelligence UK. After passing through various storage units and displays, including an early restoration at RAF Fulbeck in 1960, it was brought to ground running condition at RAF St Athan

in Wales between 1986-1989. On the closure of St Athan, it ended up at the RAF Cosford museum where it remains today, after significant conservation work and detailed examination by specialist Joe Picarella, and a period at the RAF Museum Hendon.

Russian Reveal

Also appearing, in 2008, were major wreck parts that arrived in a container at the Voenno-Patrioticheskoe Obshestvo 'Vysota' (Military-Patriotic Association 'Height') in the suburb of Saint-Petersburg, Russia. Parts included substantial fuselage sections, wings, tail, as well as other critical parts such as the engine, undercarriage, and radiator.

There is one more Ki-61. This is a wreck underwater found by diver Rod Pierce. "This particular aircraft was found in the early seventies by my brother and myself after being told by a friend of a strange aircraft in 20 metres of water in Dreggerhafen, Papua New Guinea." As well as the decay of the structure being caused by the shallow salt water, Rod adds: "Most of the aircraft is complete but recently the starboard wing was ripped off by a charter vessel but when found it was complete. Over the years it has been stripped by divers.

"When we found it, there was damage to the leading edge inboard of the port wing. It also had a radio and could have been a flight leader. ... No I.D. can be found on the aircraft."

We are still some distance from a major revival of the type, but more has been achieved than many realise.

The author would like to thank James Long, Ronnie Olsthoorn of www.aviationart.aero, Joe Picarella, and the many other people who have provided access and information on this unfortunately obscure type over many years. Further information is appreciated, via the editorial address.



RIGHT: One of the very rare Japanese licence-built engines as required for any airworthy rebuild. [J Kightly]



LEFT: The ultra-rare, unique surviving Ki-100 seen when at the Milestones of Flight hall at the RAF Museum, Hendon, in 2008. [J Kightly]

BELOW: The mystery wreck found by Rod Pierce. [R Pierce]

RIGHT: An almost complete fuselage structure seen at Wangaratta in 2007. [J Kightly]



RIGHT: A full jig, usually based off a derelict but 'true' airframe, is required for these kinds of projects. [J Kightly]



BELOW: The most complete of the Ki-61s reconstructed at the former Precision Aerospace, seen in 2010. [J Kightly]





Dangerous but frail

The recent restoration in Japan of a Kawasaki Ki-61 'Hien' ('flying swallow') marks the welcome addition of a thoroughbred into the world's museum inventory. South Pacific Correspondent **Michael John Claringbould** details the type's tale of woe in the South Pacific.

The evolution of this fighter reflects an impressive and independent attempt by Japanese aircraft designers to better the Messerschmitt Bf 109. The only non-original part of the new fighter was the 1,100hp (820 kW) inline Kawasaki Ha40 engine (a licence-built copy of the Messerschmitt's DB 601 Aa). The Ki-61 was trialled in combat on Australia's northern doorstep in New Guinea. An enigmatic aircraft, there is much about its operational use that will remain lost to history.

By early 1943, the Japanese army was struggling in the South Pacific, termed the 'Southern Front' by the Japanese military. A reinforcement strategy saw the Army commit two 'Hien' regiments (*Hiko Sentai*) to New Guinea. Throughout early 1943, the 68th and 78th *Sentai* formed and trained at Akeno Flying School in Japan to prepare for their task. The pilots transitioned to the 'Hien' from the fixed-gear Ki-27 'Nate', and many were damaged by forgetful pilots making gear-up landings. Initially, they were taught to use fine pitch for taxiing while constantly monitoring coolant temperature,

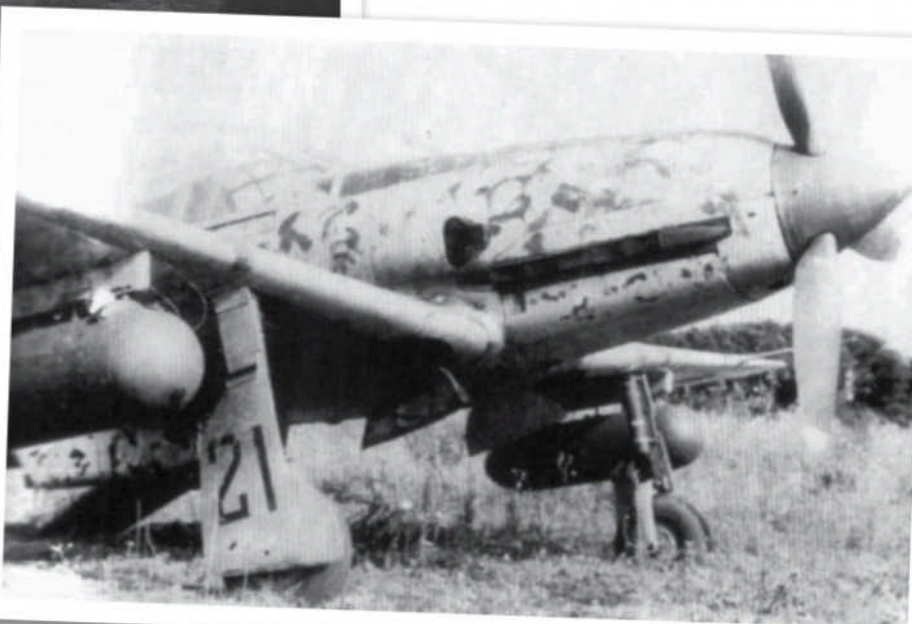




MAIN: Both the markings of the 68th and 78th Sentai still cause dispute among historians. An intelligence gift to the Allies was the wreckage of a 'Hien' shot down in the New Guinea highlands by ground fire on 24 July 1943. Sgt Kurajiro Umezawa of the 78th Sentai lost his life in the crash near Absoloka village. Red stripes on the fin as depicted here designated the fighter as belonging to the regiment's Second Squadron and provided the first indications of 78th Sentai markings as used in the theatre.

LEFT: A 68th Sentai 'Hien' closes on a 38th BG 'Green Dragon' squadron Mitchell as it approaches Dagua.

BELOW: The 200 litre drop tanks of a Ki-61 are prominent in this rare shot taken somewhere in New Guinea. The '21' likely represents the last two numbers of the constructor's number. In many cases these digits were also painted on the rudder.



but they would later find that, on New Guinea's dirt airfields, increasing pitch was the only way to move the heavy fighter forward.

On 4 April 1943, twenty-seven 68th *Sen-tai* 'Hien' were loaded at Yokosuka aboard the carrier *Taiyo* which then sailed to Truk Atoll, the massive navy facility 1,330 kilometres north of Rabaul. The carrier and its valuable cargo docked there on 10 April 1943. Despite having an expansive and sealed runway, the hot tropical air further increased engine temperatures, precipitating engine failures due to fuel pump problems. Several civilian engineers from Kawasaki Heavy Industries had accompanied the regiment to monitor the type's introduction to operations. Despite attempts to resolve the problems it appeared they were systemic. With pressure to reinforce the front, Tokyo nonetheless ordered the 'Hien' into combat. Unsurprisingly, the pilots were not happy with the situation, even more so since one had inexplicably disappeared at sea during a test flight from Truk.

Two 200-litre (52 US gallon) drop tanks were attached to the wings of each Hien on 24 April in preparation for the long-distance delivery flight, estimated to be four and a half hours, to Rabaul. All aircraft were at the mercy of dead-reckoning errors as there were no landmarks or islands between Truk and their destination. Accordingly, a naval reconnaissance Ki-46 'Dinah' was assigned to act as the navigator for each formation.

LEFT: The 78th Sentai was formed in Japan from elements of the 33rd Sentai which had previously served in CBI. The 33rd relinquished its well-known 'twin-three' marking in China for horizontal tail bands before reverting to their original motif once they moved from theatre. It is likely this pattern forms the basis for the 78th Sentai's tail band markings as used in New Guinea. Strike photos from late 1943 onwards show 78th Sentai fin markings only in white. It appears, however, that this system was modified from late 1943 onwards.

“Both groups soon found themselves confronted by a wall of thunderstorms”

The new fighters were split into two groups, departing fifteen minutes apart. Both groups soon found themselves confronted by a wall of thunderstorms and turned back in severe turbulence. During the return Sergeant Oki bailed out, due to an engine failure, and was lost. Three days later the fighters were again split into two groups for a second attempt, led by Second Squadron CO, Shogo Takeuchi, and regiment CO, Major Noboru Shimoyama. This time both groups were each allocated an Army pathfinder Ki-46 for navigation purposes.

The second group made landfall at Vunakanau near Rabaul several hours later, right on course, but the first group became separated from their pathfinder. The fighters' compasses had not been recalibrated at Truk. Confronted by deteriorating weather, two returned to Truk, two disappeared, one found its way to Kavieng, and the remaining eight ditched offshore Nuguria Lagoon. The lagoon was only five degrees to the left of track, but it still lay a good 300 kilometres

northeast of Rabaul. It was two weeks before the only surviving pilot was rescued from the atoll by a patrol vessel. It turned out the other seven made it to shore only to be killed by hostile locals. Several days later, the vessel carrying the regiment's ground crew had still failed to arrive at Rabaul. It had been torpedoed by a submarine and many of the skilled personnel had lost their lives. Those who were rescued appeared at Vunakanau airfield ten days later. A diarist recorded that they were still completely covered in oil with "black faces like the local tribesman. Only their eyes shone and it was difficult to identify them".

The calamitous costs of sea delivery forced the Army to deploy the 78th regiment, still in Japan, via an overland route. These aircraft flew to Rabaul via Formosa, the Philippines, Celebes, and New Guinea's northern coast. The regiment's 45 fighters departed Japan on 16 June 1943. Nonetheless, a dozen were lost on the 9,000 kilometre (5,600 mile) route due to accidents or engine failures.



LEFT: The wing fillet of the 'Hien' is showcased before an unknown pilot departs from Japan for the 'Southern Front'. Few 'Hien' pilots survived the war.

BELOW: A rare shot of one of the 68th Sentai 'Hien' strapped down for delivery, on the carrier Taiyo, on the early April 1943 voyage between Yokosuka and Truk. The Imperial Japanese Navy officer is unidentified.

The type's first ever sortie was a patrol over Cape Gloucester from Rabaul on 17 May 1943 designed to alert destroyers to enemy aircraft. The mission cost the life of Ginzo Shirogane whose engine failed in the cruise and, as a result, the 'Hien' were grounded for six weeks at Rabaul. As they had in Truk, Kawasaki's engineers again tried to resolve the persistent problems. Poor quality fuel seals were isolated as the issue, but better quality replacements were unavailable. A second mission, this time featuring combat, unfolded over the Solomons on 2 July when the 'Hien' was called upon to help attack the Rendova landings because the Imperial Navy G4M1 bombers had been decimated in an attack there only two days prior. This cost the life of 68th *Sentai* pilot Toshio Abe as his aircraft was later found forced-landed on a tidal beach. The cause of this loss and his fate remain unclear. Separately, Takashi Noguchi was forced to ditch off Bougainville when his engine quit, although he swam ashore and was returned to Rabaul with the help of Japanese soldiers. On 4 July, fifteen Ki-43 'Oscars' and two 68th *Sentai* 'Hien' joined Navy 'Zeros' in escorting Ki-21 'Sally' bombers to attack Rendova, marking the second and last occasion that 'Hien' would appear over the Solomons.

The Move to New Guinea

In June 1943 the Imperial Army was assigned full control of the New Guinea mainland, and so a substantive composite group of 'Hien' flew to Lae on 3 July. A 78th *Sentai* detachment remained at Lae from where it would conduct patrols. This detachment patrolled the Huon Peninsula on 11 July 1943, during which two more 'Hien' losses cost the lives of Tojiro Ninoi and Tayoshi Midera. Attributed to the ongoing fuel problems, one ditched offshore Dreggerhafen, its hulk still resting there today in twenty metres of water. [See page 46] Only two days later, at Rabaul where the last batch of 78th *Sentai* 'Hien' was preparing to move to New Guinea, another operational accident claimed the life of Sho'ichi Ideta. Meanwhile the 68th *Sentai* 'Hien' deployed westwards to Madang and Wewak.

Onto the pile of existing issues was now thrown the challenge posed by crude airfield infrastructure. Until now 'Hien' pilots had operated from solid surface runways at Akeno and Truk (including Vunakanau which had metal runway matting). The recent spate of 'Hien' losses meant there were now more pilots at Rabaul than available fighters. The extra pilots were ferried to Dagua and Boram (in the Wewak area) via a Ki-21 'Sally' bomber. Dagua had a 50 x 1200 metre runway, but this was cleared over a sandy base studded with tree roots. Two 'Hien' were lost in the move. Tomii Saorishi over-ran the runway at Dagua and crashed and another 'Hien' was lost to an unspecified mechanical failure. The growing list of fatalities and destroyed fighters confirmed that the aircraft's teething troubles were both lethal and unshakable.

Dagua posed other challenges aside from a sub-standard runway. There was limited space to store the 200 litre drop-tanks essential for offensive missions. A decision was made to stack them, fully fueled, near Dagua's runway from where they could easily be fitted. However this fuel cache was spectacularly destroyed in one of the early low-level raids. Similar logistics, including ammunition, were more widely dispersed after this raid, but this meant servicing the aircraft was cumbersome. With Kawasaki's focus on production rather than spares, the scarcity of the latter saw many of Wewak's 'Hien' grounded. Furthermore, the nearest engine overhaul depot for the Ha-40 was more than 1600 kilometers (1,000 miles) away in the Halmaheras. Thus, while the type's radial-engined contemporaries enjoyed major repairs in the field, the 'Hien' did not, and it was grounded in disproportionate numbers. As if the engine problems were not already bad enough, leaking hydraulics now began to appear courtesy of the tropical and humid climate. The ongoing maintenance challenges

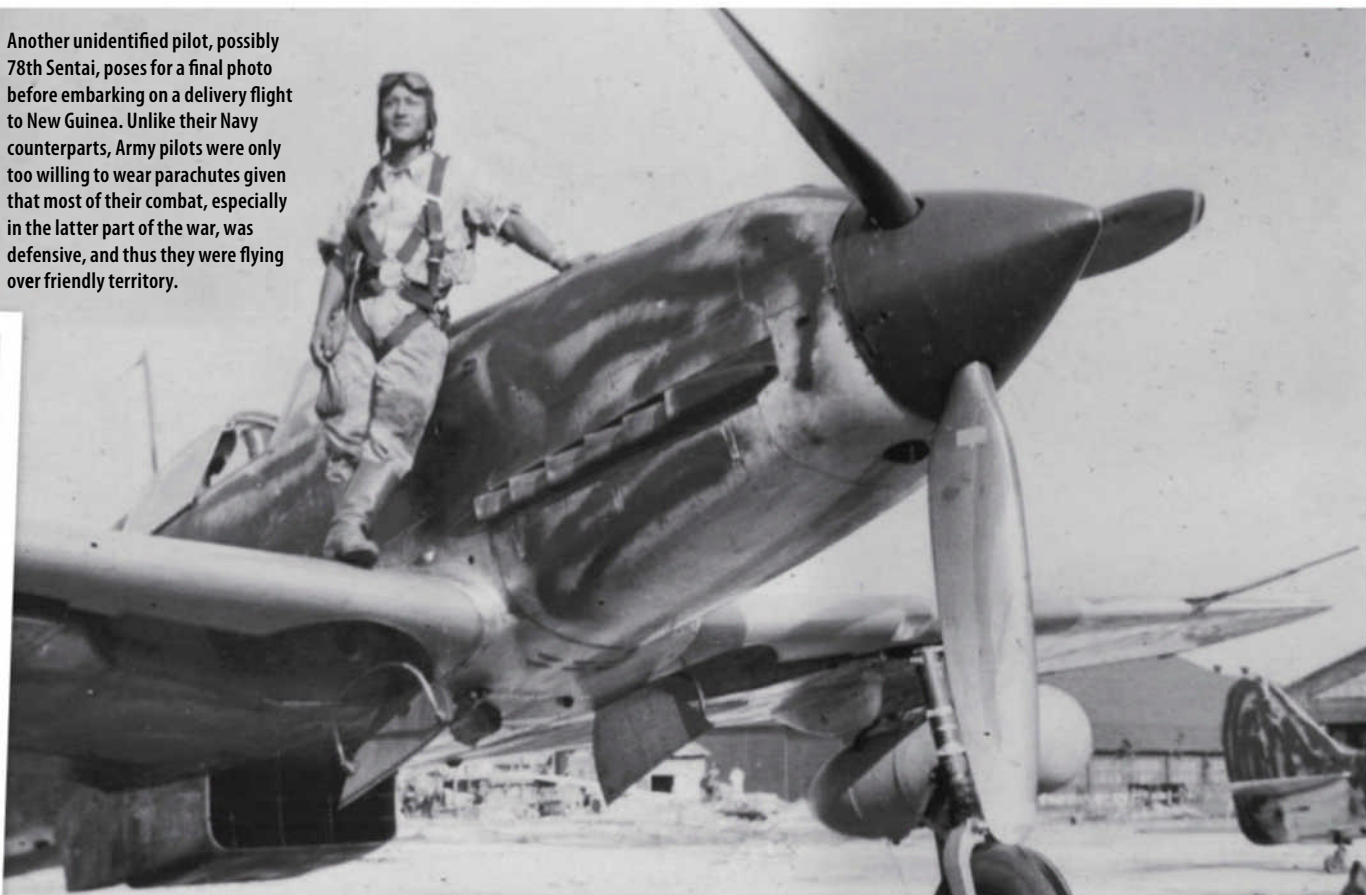


continued to dictate operations, but it was the finicky fuel pumps that continued to give no end of trouble.

Despite their deployments to both the Solomons and New Guinea, thus far no 'Hien' had made contact with Allied aircraft. The first encounter unfolded on 18 July 1943 during a fighter sweep over Salamaua conducted by 37 Japanese fighters, including Ki-43s. The CO of the 14th Hikodan, the umbrella structure for both 'Hein' regiments, Colonel Tateyama Takeo, led the composite formation. The Japanese ran into six P-38s and Takashi Tomijima of the 78th *Sentai* claimed one American to make the unit's first aerial claim. No Lightning was lost, however, nor were there any Japanese combat losses. Chinnosuke Nakagawa, a 68th *Sentai* pilot, was, however, forced to put down at Hansa Bay due to engine trouble.

Two days later the 68th *Sentai* claimed its first victory when the pilots stumbled across a

Another unidentified pilot, possibly 78th Sentai, poses for a final photo before embarking on a delivery flight to New Guinea. Unlike their Navy counterparts, Army pilots were only too willing to wear parachutes given that most of their combat, especially in the latter part of the war, was defensive, and thus they were flying over friendly territory.



lone B-24D Liberator approaching Madang. Five 'Hien' led by the Second Squadron CO, Captain Shogo Takeuchi, shot down the 'Virgin III'. The bomber exploded in mid-air and large pieces fell to earth in full view of Australian ground forces. Six of the crew were found dead in the wreckage, but one other, remarkably, was alive although he died shortly after. One of those aboard who was never recovered was the first American photojournalist killed in World War II, prize-winning news photographer, Danish-born Carl Thusaard.

On 11 October 1943 both 'Hien' squadrons were dealt a blow when Lieutenant-Colonel Tamiya Teranishi, CO of the 14th Brigade who had recently replaced Colonel Tateyama, was shot down near Wewak. The CO of the 348th Fighter Group, Neel Kearby, was awarded the Medal of Honor for this mission. Tamiya and Captain Koyama Shigeru of the 68th *Sentai* were also lost during the engagement and it is likely that it was Kearby, in a P-47D Thunderbolt, who shot down Tamiya. Japanese Army orders at this juncture forbade senior commanders to fly in combat, but Tamiya commandeered a Ki-43-II for the fight as there was no spare 'Hien'. A Fifth Air Force low-level attack against Boram Field on 16 October proved decisive and wiped out many parked aircraft for no U.S. losses. The Japanese lost four 'Hiens' to escorting Lightnings: Yoshichika Mutaguchi,

“ Only the best pilots flew the cannon equipped Hien ”

Fujio Tanogami and Shiro Nonda from the 78th *Sentai*; and Kiyoshi Ito from the 68th.

Meanwhile, back in Japan, engineers had been exploring ways of increasing the aircraft's firepower and did so by installing one German Mauser MG 151 20mm cannon into each wing, in the position previously occupied by the wing machine guns. Kawasaki had soon assembled 400 cannon-armed fighters, designated the Ki-61-I-hei. Production of the model commenced in September 1943, but these more lethal fighters did not reach New Guinea until December 1943. Susumu Kajinami was assigned to the 68th *Sentai*'s Second Squadron and was one of the few who survived the war to record his memoirs including the first time the squadron used the Mauser-equipped 'Hien': "At 08:30 hours we were told that about seventy B-25s were approaching at very low altitude from the east without fighters. It was estimated they would reach our airbase at around 09:20 hours. Within thirty minutes all our available fighters had launched. We headed east between 2,000 to 3,000 ft. Meanwhile the 78th *Sentai* broke off after about ten minutes to wait for the enemy.

Only the best pilots flew the cannon-equipped 'Hien', and they would surprise the enemy. We found the B-25s skimming the surface of the sea. They seemed not to have noticed us since our altitude was higher. We let them pass us then made a 180 degree turn and followed them. They were flying in five or six plane formations at over 400 km/hour. Lt Inoue commanded us to launch an all-out attack; Sgt Matsui targeted the fourth aircraft in the last formation whilst guarding my wing. It was time to show the cannon's power! We were 500 metres behind the B-25s when Matsui fired. I saw his fire draw into the left inner wing of the B-25 throwing up bright red thick lines. The B-25's wing broke and collapsed upwards, splashing the bomber immediately."

The arrival of cannon-equipped 'Hien' raised pilot morale considerably, however on 21 December 1943, the 68th *Sentai* lost Captain Shogo Takeuchi, commander of the regiment's Second Squadron, when, due to engine failure, he crashed on approach into trees, just off the end of Hansa Bay airfield. To have such a flamboyant and skilled pilot, much revered by his men, killed by yet another engine failure

constituted unfair play, especially since Takeuchi was extracted from the overturned wreckage alive only to die three hours later.

By the end of 1943 the first-class but quirky 'Hien' faced insurmountable odds. Most had either been abandoned due to lack of spares or destroyed by strafers. Two separate 'Hien' missions were flown on the morning of 16 January 1944, and marked the type's final combat appearance over New Guinea. The first was a strafing mission against Gusap that, despite Japanese claims to the contrary, achieved little damage. Flying again in the 68th *Sentai* formation was Susumu as cited above. After the attack, and entering friendly territory, he complacently cruised back to Boram alone at around 14,000 feet. He was jumped by P-38 Lightnings, at 11:05 hours, which shot up his port wing causing fuel vapour to stream out. He climbed to escape the persistent Lightnings which now took turns to hammer him. Susumu changed tactics and entered a left-hand spin, making about six revolutions before he pulled

out over the jungle. The P-38s thought they had dispatched their opponent and USAAF

pilot Warren Lewis claimed the kill. Alone, but running low on fuel, Susumu decided to force-land in kunai grass near a river. Upon clambering out, he covered the downed fighter with his parachute as a marker for Japanese forces to salvage spare parts. Injured in the landing, Kajinami was carried back to Boram by locals in a bush stretcher where his comrades paid his rescuers ten bottles of sake. Unit XO Yoshimi Maita was angry that he had left his aircraft intact, however. The following day he was ordered to fly back to the site and strafe his downed machine.

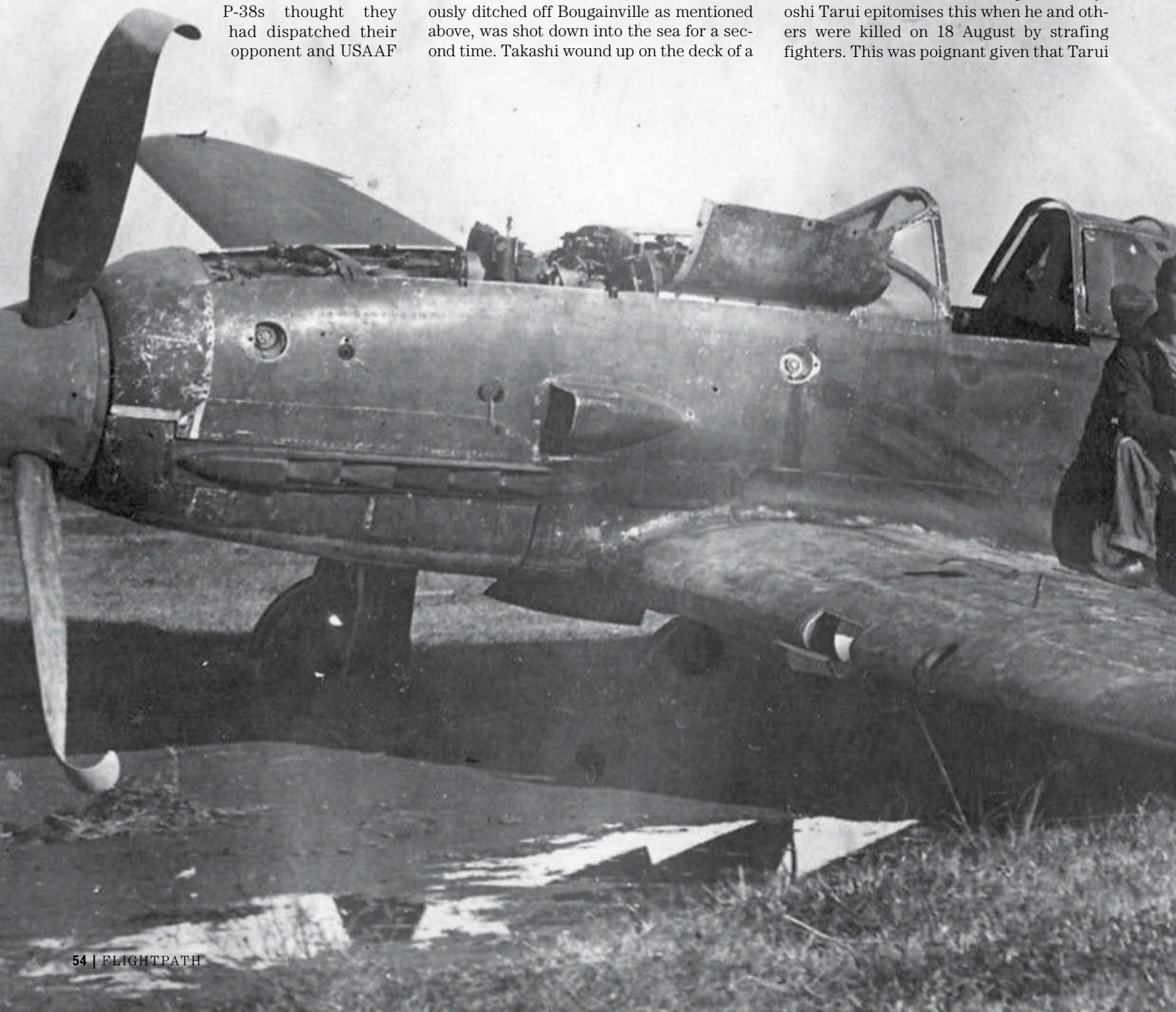
While the Gusap attack had incurred no Japanese losses, the second attack of the day dealt New Guinea's 'Hien' community another major blow. The relatively new CO of the 68th *Sentai*, Major Kiyoshi Kimura, had replaced Major Noboru Shimoyama in August 1943. Kiyoshi was shot down mid-morning by P-40s near Saidor. He had been a 'Hien' test pilot in Japan and at the time of his death was credited with 26 victories. 'Hien' pilot Kawamoto Masaru also lost his life during the encounter, while Takashi Noguchi, who previously ditched off Bougainville as mentioned above, was shot down into the sea for a second time. Takashi wound up on the deck of a

patrolling U.S. vessel and spent the remainder of the war in Cowra's POW camp.

By February 1944 both the 68th and 78th *Sentai* had almost run out of serviceable aircraft. They acquired several Ki-43 Hayabusas that had been abandoned by other units. Things were clearly going from bad to worse and then, on 1 February, the 78th *Sentai* lost its top-scoring pilot Takamiya Kieji when he crashed into a fuel tanker when landing at dusk. A master of Japanese calligraphy, Takamiya had claimed his first victory on 21 July 1943 when he led the unit's Second Squadron against Lightnings over Wewak. Takamiya was not lost to careless flying, but, in a sign of the desperate times, while trying to negotiate a bomb-cratered runway. The accident reduced the regiment's serviceable 'Hien' to a handful.

Epilogue

By April 1944, the few 'Hien' pilots remaining, for whom no space could be found on retreating bombers, struck out for Hollandia via jungle tracks. Few made it there alive. The fate of 68th *Sentai* 'Hien' pilot Mitsuyoshi Tarui epitomises this when he and others were killed on 18 August by strafing fighters. This was poignant given that Tarui



had survived the 1930s Nomonhan conflict in Mongolia while flying Ki-27 'Nates'. Furthermore, he had survived three forced-landings in 'Hien' in New Guinea, all due to engine failures. Tarui was the 68th *Sentai*'s top-scoring pilot with 38 credited victories. His death at 29 years of age underscores a humiliating chronicle to a cadre of dedicated men whose advanced fighter failed them so far from their homeland.

The 'Hien' pilot who force-landed behind Hansa Bay, Sergeant Susumu Kajinami, survived the war and returned to Japan where he flew commercially. Fellow 68th *Sentai* pilot Tahata Iwao also wrote his memoirs post-war. Tahata was evacuated to Manila after bailing out with severe burns following combat near Wewak on 22 December 1943.

Sources

Relevant MACRs and USAAF records, Japanese language 'Ah! Hien Sento-tai' and 'Desperate Struggle in the Jungle' by Iwao Tahata, memoirs of Susumu Kajinami, assistance from US historians Jim Lansdale, Osamu Tagaya, Richard Dunn and www.pacificwrecks.com.



ABOVE: This 'Hien' was abandoned in the Philippines, but nonetheless exemplifies the random camouflage patterns applied to each aircraft in tropical service. No two aircraft shared the same pattern or maybe even application with a variety of techniques ranging from spray gun to grass brushes.

BELOW: A USAAF test pilot poses with the wreckage of a late-model long-nose Ki-61-I-tei, previously assigned to the 56th *Sentai*, at either Ashiya or Saeki Air Force base during the occupation. Numerous 'Hien' were test-flown by Allied pilots throughout the war, including one at Brisbane.

