

MITSUBISHI G3M 'NELL'

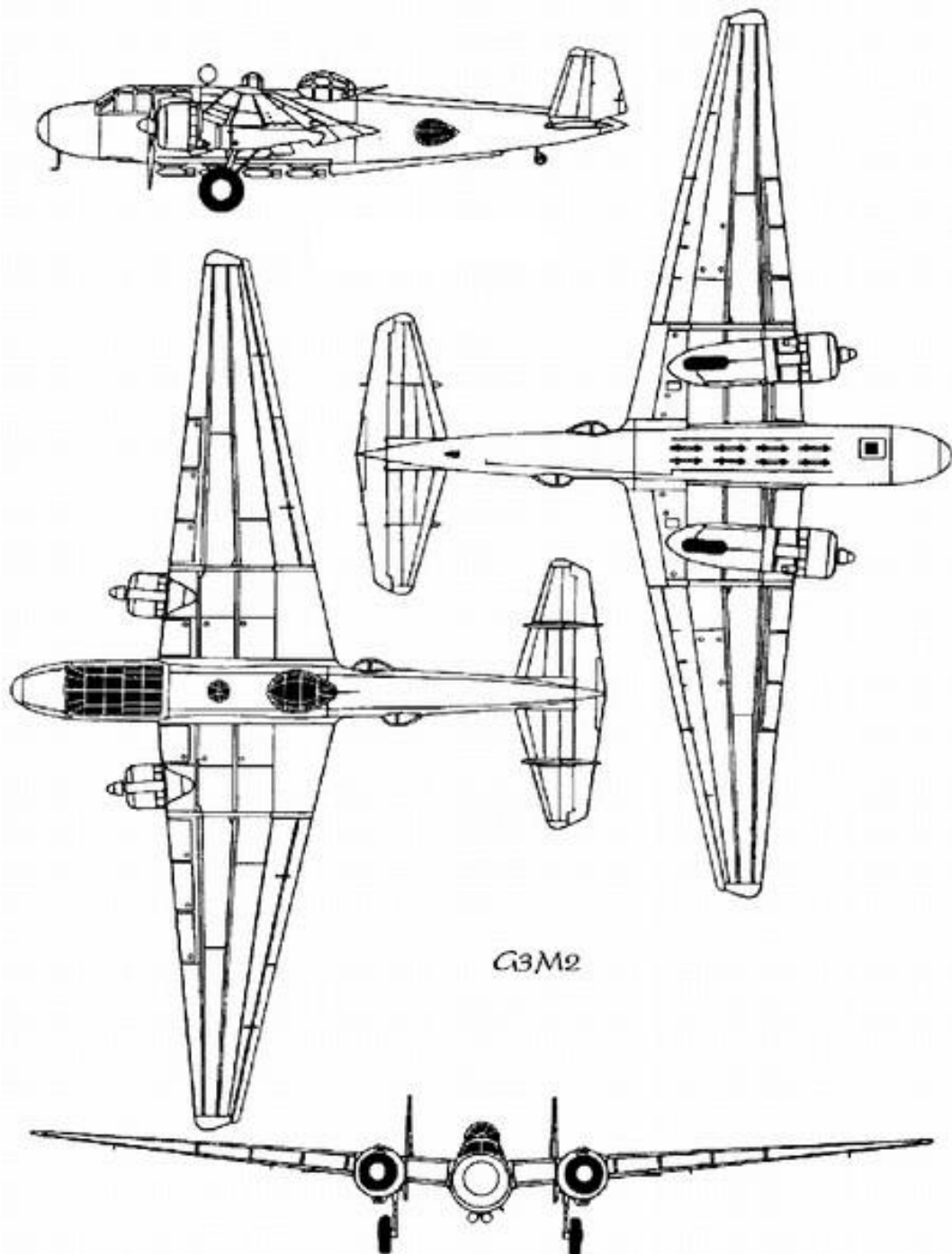
World War Photos



Jusqu'au début des années 30, le Japon possédait une force aérienne qui datait généralement du premier conflit mondial, à l'effectif réduit et de qualité médiocre. Mais des projets d'expansion territoriale et d'hégémonie sur le continent asiatique, ainsi que l'amorce de progrès technologiques importants en occident, incitèrent les japonais à se lancer à leur tour dans la compétition. En 1933, le futur amiral Yamamoto était directeur du département technique du bureau aéronautique de la Marine Impériale. À ce titre, il était parvenu à convaincre le haut commandement de la nécessité de mettre au point un appareil à long rayon d'action pour épauler, à partir de bases terrestres, les avions embarqués.



La firme Mitsubishi mit au point un des premiers monoplans japonais, un bimoteur à double dérive, entièrement métallique, dont les postes de tir étaient carénés et capable d'emporter une torpille de 800 kg ou l'équivalent en bombes. L'appareil, désigné provisoirement Ka-15, était propulsé par deux moteurs Hiro type 91 et vola pour la première fois en juillet 1935. Il entra en service dès l'année suivante et fut produit à 21 exemplaires. Bien que déjà satisfaisantes, les performances étaient susceptibles d'amélioration ; l'avion fut alors équipé de deux moteurs Mitsubishi Kinsei-3 de 910 Ch et reçut la désignation de **G3M-1** (nom de code « **Nell** » pour les alliés). Il fut produit 34 exemplaires de ce modèle, qui, selon les Japonais, égalait le Bristol Blenheim ou le Tupolev SB-2. Dans un souci constant d'augmentation de puissance, deux autres modèles, l'essentiel de la production, furent construits : **G3M-2**, avec des moteurs Kinsei-41 de 1075 Ch et **G3M-3**, mieux armé, avec des moteurs Tsuisei-51 de 1300 Ch. À noter que la version transport des G3M-1 et G3M-2 devenait Yokosuka L3Y-1/L3Y-2, au code allié Tina. La production totale de **G3M** fut de 1048 exemplaires (636 construits par Mitsubishi et, à partir de 1941, 412 par Nakajima). Bien que réduit à des rôles secondaires à partir de 1943, le vétéran Nell restera en service jusqu'à la fin du conflit.



The **Mitsubishi G3M** (九六式陸上攻撃機, *Kyūroku-shiki rikujō kōgeki-ki*, as **Type 96 land-based attack aircraft "Rikko"**; [Allied reporting name "Nell"](#)) was a Japanese [bomber](#) and [transport aircraft](#) used by the [Imperial Japanese Navy Air Service](#) (IJNAS) during [World War II](#). The [Yokosuka L3Y](#) (Allied reporting name "**Tina**"), was a transport variant of the aircraft manufactured by the [Yokosuka Naval Air Technical Arsenal](#). The G3M bomber saw extensive use in the [Pacific War](#). Attacks by G3M and [G4M](#) bombers resulted in the sinking of the [Royal Navy battleship HMS Prince of Wales](#) and [battlecruiser HMS Repulse](#), the first time [capital ships](#) actively defending themselves were sunk solely by air power while in the open sea. In order to maintain the speed and high-altitude performance of the G3M with a heavy payload, it lacked any form of defensive armour or [self-sealing fuel tanks](#). This trait was maintained in the G3M's successor the G4M. The vulnerability of these bombers to fighters and surface gunfire earned them the unofficial nickname of "one shot lighter" or "the flying lighter" by Allied fighter pilots.^{[1][2][3]}

Design and development

The G3M has its origins in a specification submitted to the [Mitsubishi](#) company from the [Imperial Japanese Navy](#) requesting a [bomber](#) aircraft with a range unprecedented^[*citation needed*] at the time. This principally stemmed from [Admiral Isoroku Yamamoto](#)'s influence in the Naval High Commission. The bomber was to have the capacity to accommodate an [aerial torpedo](#) capable of sinking an armoured [battleship](#). The speed requirement submitted by the naval department was again also unprecedented^[*citation needed*], not only in Japanese but also in international bomber aviation, where in relation to the envisaged Japanese battlegrounds of China and the Pacific, the bomber would need to not only cover long distances, but necessarily have exceptional speed to strike distant targets with a minimum attack time. Thus the G3M was an embodiment of Japanese military aircraft design in the brief period leading to the [Pacific War](#), with powerful offensive armament (in this case in the form of bombs and torpedoes) and range and speed emphasised over protection and defensive capabilities.



Two G3M2 bombers - the nearest Model 22 and the other a Model 21

The G3M was originally designed without any form of defensive weaponry, with its high-altitude performance being regarded as sufficient to evade enemy [anti-aircraft guns](#) and its high speed in combination with the planned high performance [Mitsubishi A5M fighter](#) envisaged as an armed escort considered sufficient to counter any enemy fighters.

Even in the low-speed, low-level role of torpedo bomber, the superior fighter escort – combined with the G3M's high speed – was considered sufficient against any form of ship-based AA guns or carrier-based fighters. The lightweight structure and complete lack of defensive machine guns and the additional crew necessary to operate them (features in the early [prototype](#) design) were considered essential to maintain the speed and high-altitude performance of the G3M with a heavy payload. Even after the modified final prototype, which did include three defensive machine gun emplacements, the G3M kept its lightweight structure and lacked any form of [defensive armour](#) or [self-sealing fuel tanks](#), as these were considered to retard speed and altitude. This trait in Japanese bomber and fighter design manifested itself again in its successor, the [Mitsubishi G4M](#), whose design so strongly emphasized fuel and bomb load for long-range strikes at the expense of defence that its vulnerability to fighters and ground and surface gunfire earned it the unofficial nickname of "one shot lighter" by Allied fighter pilots.^[4] The [bombsight](#) used in the G3M was primitive compared to the mechanisms used in the G3M's contemporaries such as the [B-17 Flying Fortress](#) and [Heinkel He 111](#). Aside from the limited precision necessary in its naval role as a long-range [torpedo bomber](#) against Allied naval fleets, the G3M frequently operated with other G3M units in massive "wave" formation. Use of these large formations eliminated the need for singular high-precision bombing attacks. Later the [Nakajima Company](#) redesigned the G3M into the improved G3M3 (Model 23) with more powerful engines and increased fuel capacity. This version was manufactured only by Nakajima, being the most rapidly produced in wartime. This version entered service in 1941, and was maintained in service for two years, and later used in 1943 alongside the G3M2 for long-range maritime reconnaissance with radar, due to its excellent long-range performance. Other G3M derivations were the [transport](#) versions, G3M-L and L3Y, the latter built by [Yokosuka](#).

Operational history



A formation of G3Ms

The G3M flew for first time in 1935, taking off from a [Nagasaki](#) airfield belonging to [Mitsubishi Heavy Industries](#) and landing at [Haneda Airport](#) on the outskirts of [Tokyo](#). The G3M first saw combat in Japan's expansionist campaigns on the Chinese mainland in what became known as the "[Second Sino-Japanese War](#)", where the G3M was able to exploit its long-range capability when, during August–November 1937, the 1. *Rengo Kōkūtai* (a special unit) was established, operating alongside the Kanoya and Kizarazu Kōkūtai based in [Taipei](#), [Formosa](#), [Omura](#), [Kyūshū](#) and [Jeju Island](#). On 14 August of that same year, 42 G3Ms and seven [Hiro G2H1s](#), escorted by 12 [Nakajima A4Ns](#) and 12 [Mitsubishi A5Ms](#) of the 2. *Rengo Kōkūtai* (a unit consisting of the 12th and 13th *kōkūtai*), departed from their bases to cross the [East China Sea](#) for the bombing of [Hangchow](#) and [Kwanteh](#), and performed, amongst other actions, [terror bombing](#) of coastal and inland targets in China, including bombing during the [Battle of Shanghai](#) and [Nanjing](#).

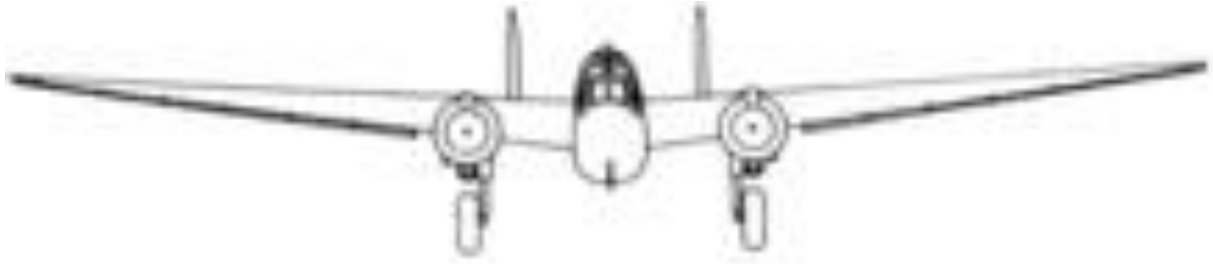
The attacking [G3M bombers and escorting fighters were often engaged by Curtiss Hawk III and Boeing P-26/281 fighters](#) of the [Chinese Air Force](#) early on in the war. Later, from bases in occupied Chinese territories, it took part in the strategic [carpet bombing](#) of the Chinese heartland, its combat range being sufficient for the great distances involved. Most notably, it was involved in the round-the-clock [bombing of Chongqing](#). When the [Pacific War](#) erupted with the invasion of [Malaya](#) and [bombing of Pearl Harbor](#) in December 1941, the G3M was by this time considered to be antiquated, but still three front-line units (the 22nd to 24th *koku sentai*) were operating a total of 204 G3M2s in four *kōkūtai* (naval air corps) in the central Pacific^[5] and of these 54 aircraft from the *Takao Kōkūtai*^{[6][7]} were deployed from Formosa in the opening of the [Battle of the Philippines](#). On 8 December 1941, (7 December across the [International Date Line](#)), G3Ms from the *Mihoro Kōkūtai* struck [Singapore](#) from bases in occupied Vietnam as one of many air raids during the [Battle of Singapore](#), resulting in thousands of British and Asian civilians dead. [Wake Island](#) was similarly bombed by G3Ms from the *Chitose Kōkūtai* on the first day of the war, with both civilian and [US Navy](#) infrastructure being heavily damaged on the ground. Other G3Ms of *Chitose Kōkūtai*, based in [Kwajalein Atoll](#), attacked US Navy and civilian installations on [Howland Island](#) in the same period.



A G3M from the [Genzan Kōkūtai](#) as can be seen from the code on the tail.

The G3M was famous for taking part, along with the more advanced [Mitsubishi G4M "Betty"](#), in [the sinking of two British capital ships](#) on 10 December 1941. Nells from the [Genzan Kōkūtai](#) provided important support during the attack on [HMS Prince of Wales](#) and [Repulse](#) (Force Z) near the Malayan coast. *Prince of Wales* and *Repulse* were the first two capital ships ever sunk exclusively by an air attack while at sea during war. The [attack on Darwin](#), Australia on 19 February 1942, by 188 Japanese aircraft, included 27 G3Ms of the 1. *Kōkūtai* (1st Air Group) based at [Ambon](#), in the [Dutch East Indies](#). G3Ms attacked alongside 27 Mitsubishi G4M "Betty" bombers. These bombers followed an 81-strong first wave of [Mitsubishi A6M Zero](#) fighters, [Aichi D3A](#) dive bombers and [Nakajima B5N](#) torpedo bombers. G3Ms of the 701 Air Group put two torpedoes into heavy cruiser [USS Chicago](#) on January 29, 1943 during [the Battle of Rennell Island](#), paving the way for her sinking by further torpedoes dropped by G4M bombers the next day. From 1943 until the end of the war, the majority of G3Ms served as [glider tugs](#), aircrew and paratroop trainers, and transports for high-ranking officers and VIPs between the home islands, occupied territories, and combat fronts.

Specifications (Mitsubishi G3M2 Model 21)



3-view drawing of the Mitsubishi G3M

General characteristics

- **Crew:** 7
- **Length:** 16.45 m (54 ft 0 in)
- **Wingspan:** 25 m (82 ft 0 in)
- **Height:** 3.68 m (12 ft 1 in)
- **Wing area:** 75 m² (810 sq ft)
- **Empty weight:** 4,965 kg (10,946 lb)
- **Gross weight:** 8,000 kg (17,637 lb)
- **Fuel capacity:** 3,874 L (852.2 imp gal; 1,023.4 US gal)
- **Powerplant:** 2 × [Mitsubishi Kinsei](#) 14-cyl. air-cooled radial piston engines, 791 kW (1,061 hp) each

Performance

- **Maximum speed:** 375 km/h (233 mph, 202 kn)
- **Cruise speed:** 280 km/h (170 mph, 150 kn)
- **Range:** 4,400 km (2,700 mi, 2,400 nmi)
- **Service ceiling:** 9,200 m (30,200 ft)
- **Rate of climb:** 6 m/s (1,200 ft/min)

Armament

- **Guns:**
 - 1× 20 mm (0.79 in) [Type 99 cannon](#) in rear dorsal turret
 - 4× 7.7 mm (0.30 in) [Type 92 machine gun](#) in cockpit, left and right side positions, and in retractable forward dorsal turret.
- **Bombs:** 800 kg (1,800 lb) of bombs or one [aerial torpedo](#)

