

CHAPTER 2

Technical Notes

Only three types of fighters served with the 4th Air Army in New Guinea; the Ki-43 *Hayabusa*, the Ki-45 *Toryu* and the Ki-61 *Hien*. In addition, the six field-modified Ki-46 brought to Rabaul as part of the 5th *Tokushu Kogekitai* (Special Attack Unit - see chapter 6 on the 13th *Sentai*) technically also qualify as fighters. These were modified with anti-tank guns and 12.7mm “machine-cannon” however little is known about these modifications and no evidence remains of any trials of the modified aircraft. Neither is there any evidence that they were used in combat. Note that the Japanese Army designated any automatic weapon with a calibre above 11mm as “*kikan hou*” or “machine-cannon”.

Inaccuracies and misconceptions exist over the attributes of model types and how they were used in New Guinea. The *ko* 甲, *otsu* 乙, and *hei* 丙 suffixes as applied by JAAF Headquarters to *Kitai* numbers (abbreviated as *Ki*) usually designate armament modifications. These suffixes have been almost universally rendered in English publications as “a”, “b” and “c” variants. However, these designations are a retrospective expediency, invented from the ordinal *Kanji* characters above and used only by the English-speaking world. They were never used by the manufacturers themselves, and to further confuse matters the *kanji* character *kai* 改 was applied to structurally modified airframes (an abbreviation for *kaizo* 改造, meaning remodelled). Thus, it is possible to have both an armament suffix and *kai* suffix applied to the same basic model, for example the Ki-45-*kai-ko*.

With all types of fighter in the theatre, ammunition used for 7.7 mm weapons was a mixture of standard ball and tracer. A mixture of Armor-Piercing, High Explosive and High Explosive tracer was used by the 12.7 mm “machine-cannon”.

Ki-43-I (Model I) *Hayabusa*

Most Western publications state that Nakajima’s Ki-43-I *Hayabusa* was produced sequentially in three variants:

1. Twin 7.7mm armament – “a” model
2. Twin 12.7mm armament – “b” model
3. Mixed calibre armament – “c” model

However, the “c” configuration was already in widespread service prior to the outbreak of the Pacific War and became the most common variant in the South Pacific. Due to the easy interchangeability of the two weapon types in the field, the exact number of production types and retrofits as used in the theatre cannot be determined.

Allied technical intelligence teams were quick to examine the trove of former 1st and 11th *Sentai* Model Is captured at Lae in September 1943, including a service manual. This states that the