

Color and Markings of the Japanese Explosive Ordnance at Pearl Harbor, A Summary

by Bill Sanborn

This is a summary of many posts presented at J-Aircraft .com and of some of my personal references regarding the color and markings of the aerial explosive ordnance dropped by the Japanese at Pearl Harbor. According to the noted Pearl Harbor historian, David Aiken, there were 5 weapons deployed during the strike. They were as follows:

Bombs:

- Type 99 #80 mark 5 - 800 kg armor-piercing, for attacking capital ships
- Type 99 #25 Model 1 Ordinary bomb, for attacking ship targets
- Type 98 #25 Land bomb - 250 kg bomb, for attacking land targets
- Type 97 #6 Land bomb – 60 kg bomb, for attacking land targets

Torpedo:

- Type 91 Modification 2 – 800 kg

The deployment of the weapons is as follows:

800 kg bombs: high level Kates – Akagi, Kaga, Soryu, Hiryu

250 kg ordinary bombs: second wave Vals - Akagi, Kaga, Soryu, Hiryu

250 kg land bombs: first wave Vals – Shokaku, Zuikaku

Mix of 60 kg and 250 kg land bombs: second wave Kates - Shokaku,
Zuikaku

Torpedo: Akagi, Kaga, Hiryu, Soryu

Color Summary

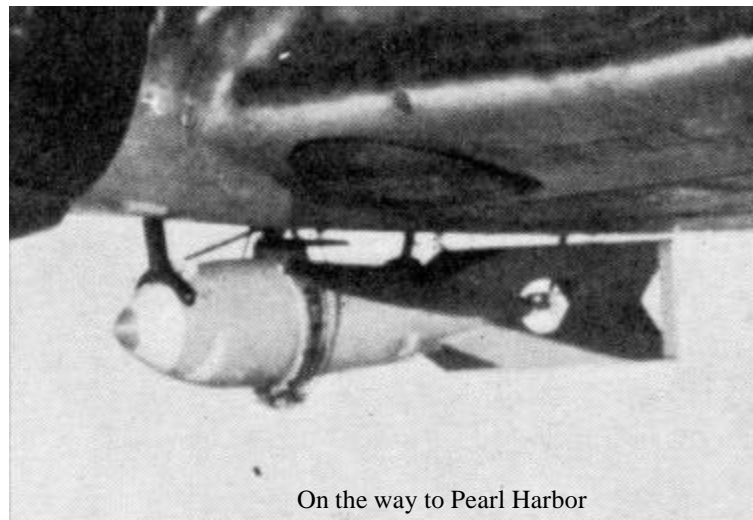
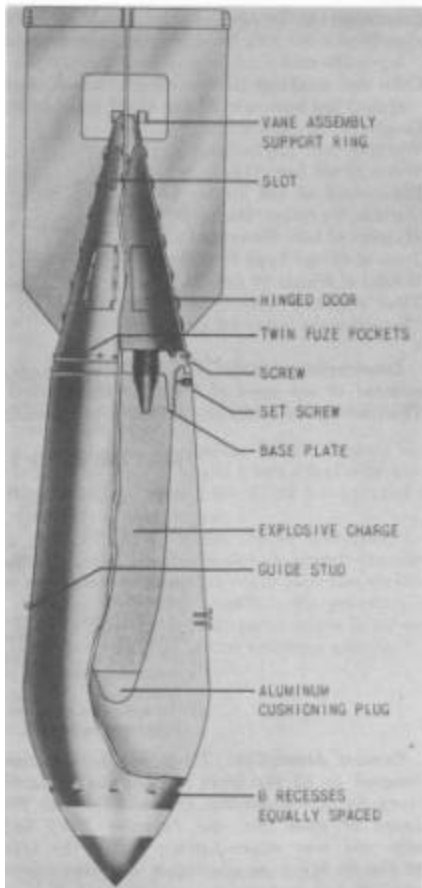
General:

Kate Bomb Racks: Black
Val Main Rack/trapeze: Black, anti-sway studs-overall color
Val Wing Rack: Not installed, but attachment studs are red

Individual Weapons:

Type 99 #80 mark 5

Overall: Gray
Nose: Green tip followed by white band
Struts: Gray
Other: None
Fuzes: nose – none
tail - 2 fuzes, only extension shaft
and vanes visible –steel colored



On the way to Pearl Harbor

Type 99 #25 Model 1 Ordinary Bomb

Overall: Gray

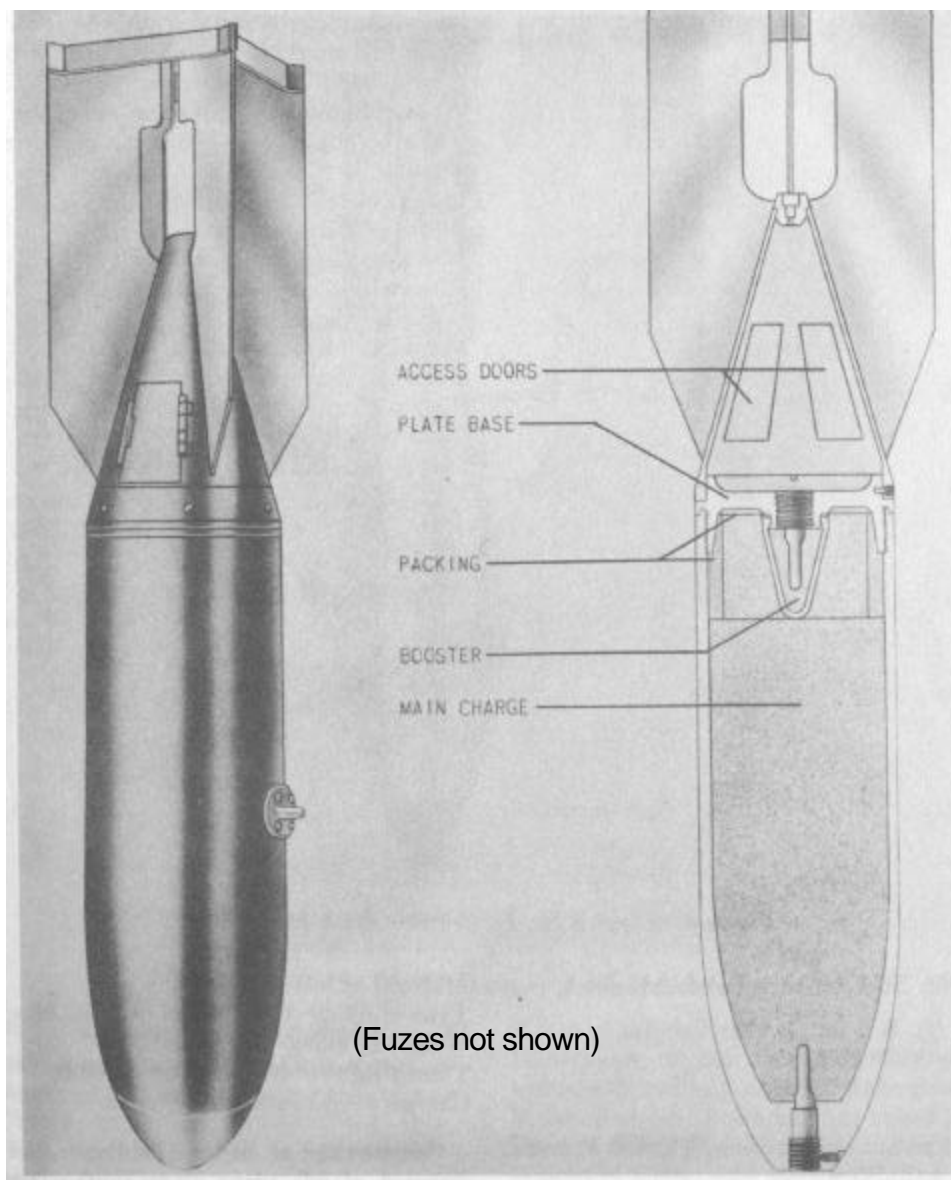
Nose: Green tip

Struts: Green

Other: Thin red stripes on each side of the bomb, 90° from suspension lug, running from tip color to tail

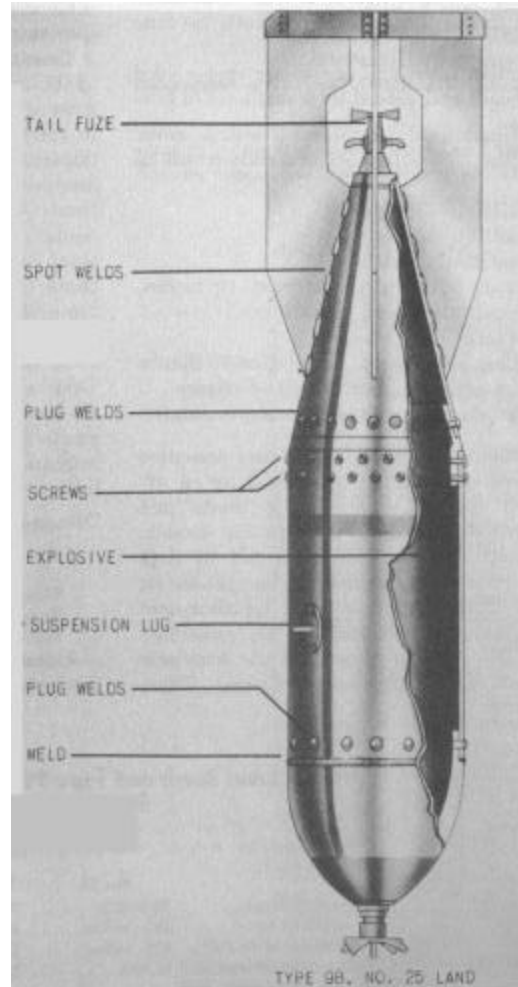
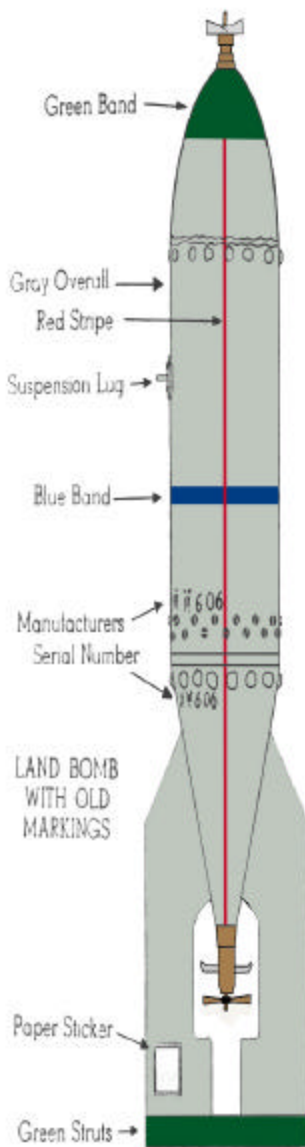
Fuzes: nose – Brass body/steel vanes or NMF (cadmium plated)

tail – Steel vanes and shaft



Type 98 #25 Land Bomb

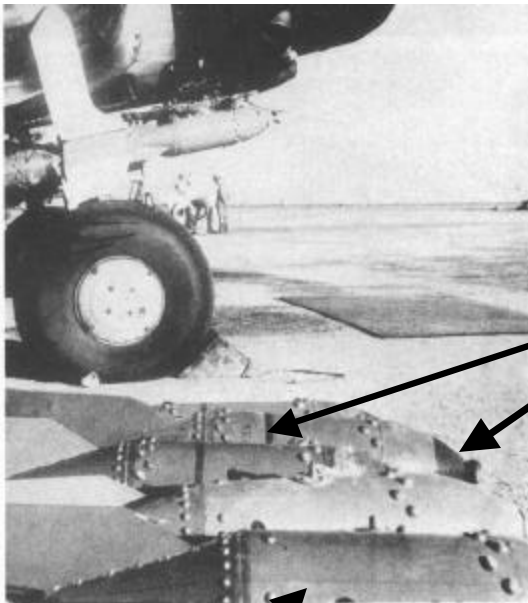
Overall: Gray
 Nose: Green tip
 Struts: Green
 Other: Blue body band behind suspension lug
 Thin red stripes on each side of the bomb, 90° from suspension lug, running from tip color to tail
 Fuzes: nose – Brass body/steel vanes or NMF (cadmium plated)
 tail – Brass or steel



One fin is missing and fin is offset 45° for clarity

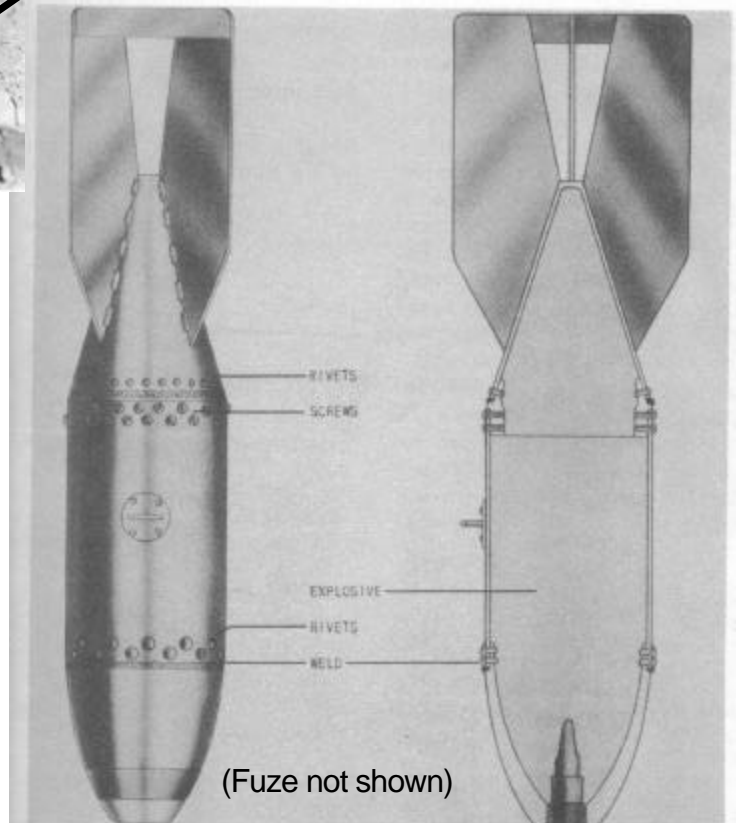
Type 97 #6 Land Bomb

Overall: Gray
Nose: Green tip
Struts: Green
Other: Blue body band behind suspension lug
Thin red stripes on each side of the bomb, 90° from suspension lug, running from tip color to tail
Fuzes: nose – Brass body/steel vanes
tail – None



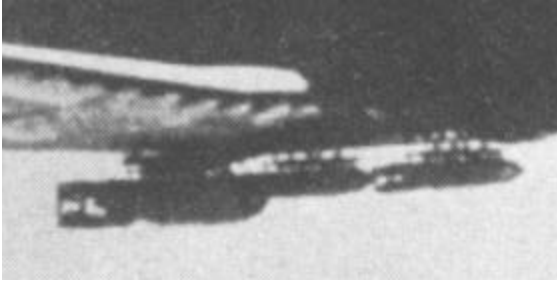
blue band
green nose

red stripe

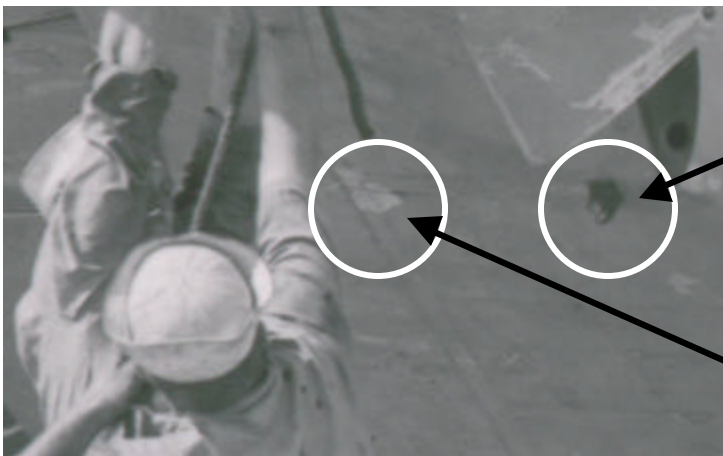


MIXED BOMB LOADS

(These bomb load examples are not from the PH strike)



VAL WING RACK ATTACHMENT STUD



STUD

PROBABLE STUD LOCATION,
LIKELY LOST IN CRASH

Type 91 Modification 2 Torpedo

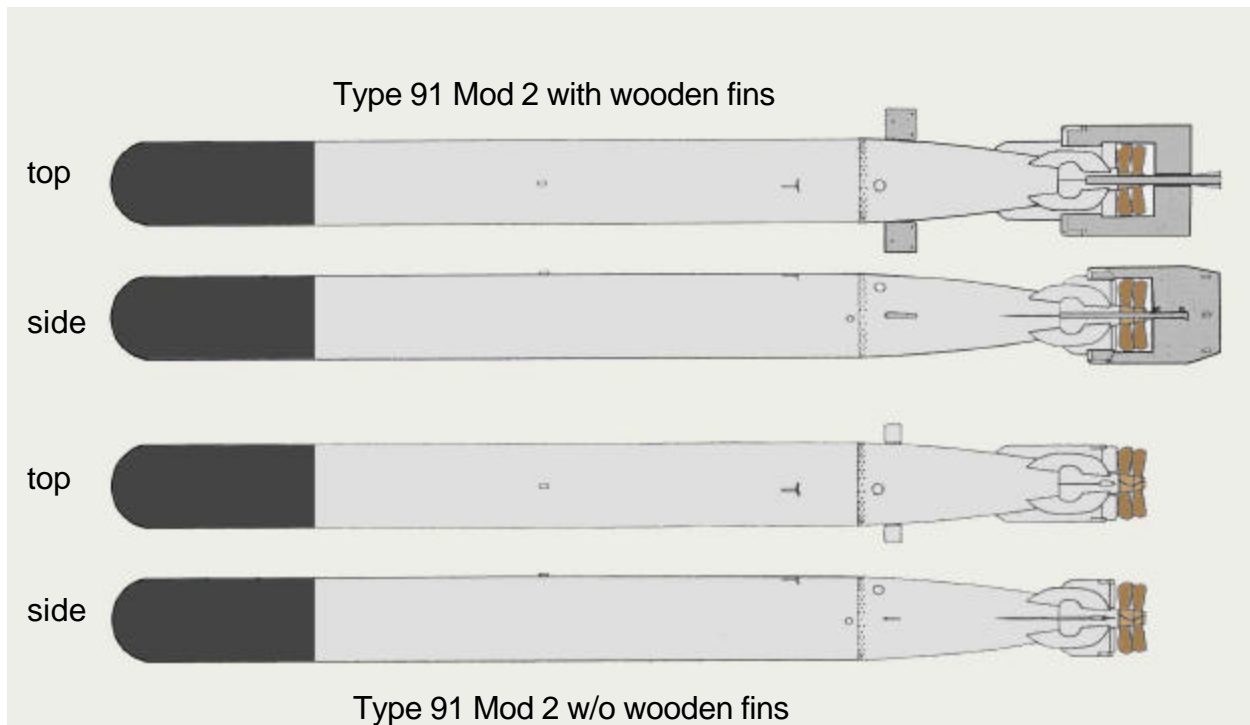
This modification has 8 fins

Overall: Steel

Nose: Black

Props: Bronze

Aerial Fins: Silver/aluminum paint



Color Comments

Bombs:

In general, there were two marking systems for Japanese Naval bombs during WWII. They are referred to as the “old” and the “new.” It is not completely clear as to when the old ended and the new began. The bombs used at Pearl Harbor seem to represent both systems. The Type 99 #80 Mark 5 appears to be painted in the “new” markings based on photographs. The three smaller bombs were most likely marked in the “old” system, since most of the ordnance recovered throughout the war was marked in the old system. It is a safe bet, until artifacts are recovered/examined, that these markings are reliable for the Pearl Harbor time frame. However, David Aiken is of the opinion that all the bombs were in the new markings. He has also indicated that the US Army Signal Corp archives contain photos of the recovered UXO, but the photos have not been revisited to determine if the markings can be ascertained.

All sources indicate that the Japanese Naval bombs were painted in gray, as opposed to the black commonly used by aviation artists. Black was in fact used by the IJAAF for its bombs. The exact color of gray has not been reported by my sources and in fact no single color may exist. Reference 1 states, “This color varies from greenish gray to bluish gray depending on variations in the paint and weathering. This paint is applied over a red [iron oxide] anti-corrosion paint.” Reference 2 reports similar color variation and adds, “This color may vary from light gray to dark gray.” A general consensus of the sources seems to lean toward lighter shades of gray. J3 has been suggested. A possible modeling paint is Testor’s Model Master

(enamel) IJA Light Gray #2115 (partially inspired by the new Hasegawa 1/48th Kate directions).

Other colors: All the following colors are just guesses. The green has been suggested as N1. Any Naval topside green will probably do. For the blue, a mid to dark hue is most likely. The red is probably Hinomaru red. These bombs were most likely painted at the factory and not in the field, so aircraft color standards may not apply.

David Aiken has indicated that the bomb racks on the Kate were black. The trapeze arms and main rack for the Val appear to be black based upon the photos in Reference 8. No wing racks for the Vals were mounted for the PH strike, however, small "U" brackets were on the wings for mounting the racks. David Aiken has indicated these were red.

Torpedoes:

The black nosed Type 91 mod 2's (most easily differentiated from the mod 1's by having 8 fins instead of 4) are supported by the photo of the torpedoes aboard Akagi and is endorsed by David Aiken from his research. Mr. Aiken has stated that the color was to easily distinguish between the mod 1 and the larger explosive load of the mod 2. The undated photo was taken in Hitokappu Bay between the first development of the Mod 2 in 1941 and June '42 (Akagi sunk). The photo is most likely from late November 1941 when Akagi was known to be in Hitokappu Bay in preparation for the Pearl Harbor strike. Akagi experts may be able to pin down other times Akagi was in the bay. In any case, this puts the photo in the correct time frame.

ACKNOWLEDGEMENTS

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REFERENCES

- 1) TM 9-1985-4/TO 39B-1A-11 Japanese Explosive Ordnance, Part 1, Department of the Army Technical Manual/ Department of the Air Force Technical Order, March 1953.
- 2) OPNAV 30-38M Handbook of Japanese Explosive Ordnance, Department of the Navy, 15 August 1945 (Photocopy of part of the manual via Jim Lansdale).
- 3) David Aiken, noted Pearl Harbor historian, private communication.
- 4) "Japanese Thunderfish," by John De Virgilio, *Naval History*, Winter 1991.
- 5) Bryan Wilburn in *Pri-Fly* (Washington DC IPMS Chapter Publication), photocopy from Urs Bopp, Date not given, but estimated ~1985.
- 6) Famous Airplanes of the World, #154, March, 1986.
- 7) Famous Airplanes of the World (new series), #32, January, 1992.
- 8) Asahi Journal, Vol. 3 No. 2.
- 9) Ian Baker's Aviation History Coloring Books, vols. 36, 40, and 41.
- 10) J-aircraft.com posts, various and many