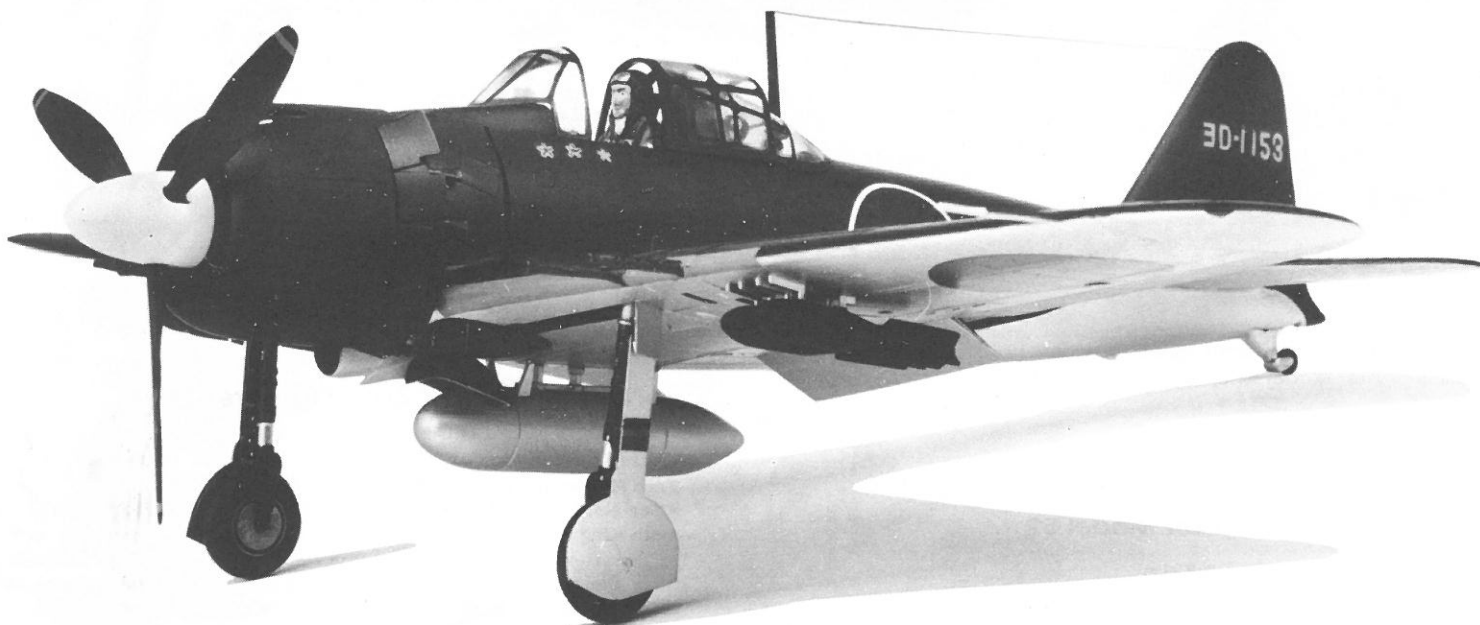


# MITSUBISHI ZERO FIGHTER

Japanese Navy Aircraft Carrier Zero Fighter  
Model 52 (A6M5, A6M5A, A6M5B, A6M5C)  
1/32 Scale Series No. 5



## Zero Fighter

Jiro Horikoshi  
Fairing Consultant;  
Former Chief of Zero Fighter Planning  
Section, Mitsubishi Aircraft Co., Ltd.

If there is a person who criticizes "Why fuss about such an old plane as Zero Fighter!", he must not understand its history or is quite indifferent to the progress of science. There are times when the tempo of progress is rapid and slow; great discoveries and inventions creates a historical evolution and the small inventions contributes to the historical significance. Men evaluates history, and our civilization was built by the instinct inherited handed down from our ancestors. Even though 30 years has lapsed, the reevaluation on the Zero Fighter is rooted by its historical significance.

When this plane was first designed Japanese planes was handicapped, compared to the international level, because of the low horsepower engine, the need to rely on raw materials from abroad and other factors. The demand laid down on the design plan are as follows: capability to oppose a large number of enemy planes with a few amount of planes, long distance flight protection, attack, and command the air supremacy. We extended our full effort in order to fulfill these demand. First of all, we accumulated many contrivance and conceptions based on the Japan's supreme Type-96 carrier fighter. There were many contrivance brought out in this design to cope with the international level, and it surpassed beyond the capability demanded.

Today, the appreciation placed on this Zero Fighter are quoted: "One cannot realize such a competent fighter in the world, powered with a thousand horsepower engine."

"Comparing to the European level, the conception in its design is astonishing. Its respond to maneuver a high and low speed is very superior."

"A might and superior plane, among the planes created until now." In the recent years Canada, America, Australia, and other countries have salvaged the Zero Fighter from the Pacific and placed them as museum collections or repaired and flown by its fans.

It was on May of 1937 when the project requirement for 12-Shi carrier fighter, to replace the 96 carrier fighter, was served to Mitsubishi and Nakajima Aircraft. The project was in greater demand than the 96 carrier fighter that was achieved by Horikoshi team. This project demanded an all-purpose fighter with greater speed, ceiling, diving and cruising power capability than before. It became the world's first fighter with the greatest cruising range, and equipped with the radio direction finder and armed with 20mm machine guns in the wing.

On March 16, 1939 the No.1 plane was completed, equipped with a powerful small size double row 14 cylinder Zuisei engine, and the constant speed propeller, the drip-shaped canopy, retracting landing gear, sectional type wing with the least shifting of air pressure, Wash-out for the prevention of tip stall, new EDS (super duralumin) material for major beams, and streamline detachable auxiliary fuel tanks, was the first used in Japan.

12-Shi carrier fighter carried out her first test flight on April 1, 1939, by pilot Shima of Mitsubishi. 12-Shi carrier fighter was given the model name of Zero type carrier fighter (A6M1). The fighter was armed with two 7.7mm machine gun above the nose engine, and two 20mm machine guns on the main wing. This No.3 fighter was named A6M2 (Zero type carrier Model II) and was equipped with new 950 HP Nakajima's Sakae Model 12 engine. With this new engine (radial double row 14 cylinder) it succeeded in surpassing the previous performed by many folds. On July 31, 1940 the Navy formally accepted this fighter as their authentic Model. Commemorating the 2600 year anniversary of the nation's founding, it was christened A6M2 (Zero carrier fighter Model II).

During the early days of the Pacific War, the Japanese Armed Forces was capable to secure the command of the air because of the Zero fighters. When the Grumman F6F Hellcat, 2000 HP engine and equipped with six 13mm machine guns, entered action it imparted a great blow to the Zero fighters. There was no progress in the development of Zero's successor and the result of numerous improvements the Zero A6M5 Model 52 was produced in greater number than its previous and various models. Model 52C was capable to cope with the Hellcat, but its added weight and because the Kinsei engine could not be supplied in time, it caused the drawback on her expected performance. Nearing the end of the war, Kinsei Model 62 engine (1500 HP) was equipped on Zero A6M8C (54C, Mass Produced Model 64) which demonstrated here great capability, but before its mass production the war ended. Zero fighter, among the Japanese aircrafts, was most produced in number...by Mitsubishi 3,879, Nakajima 6,215, including sea plane and trainers totaling 10,937 fighters.

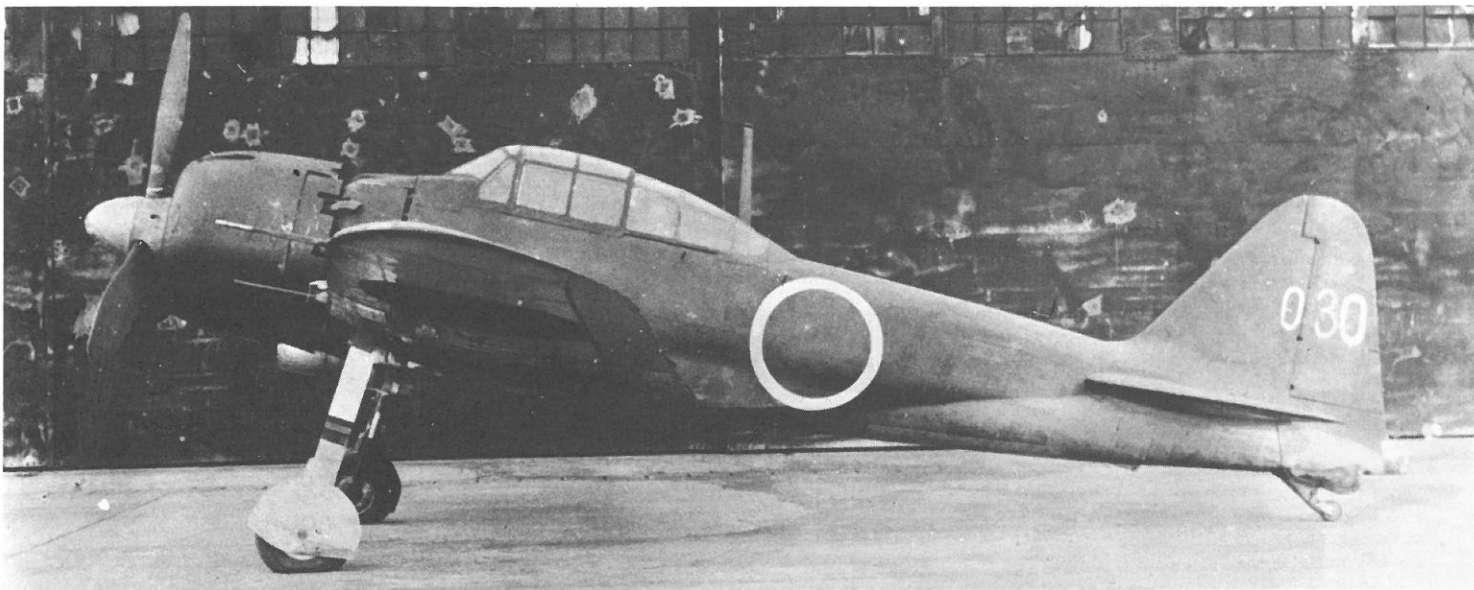
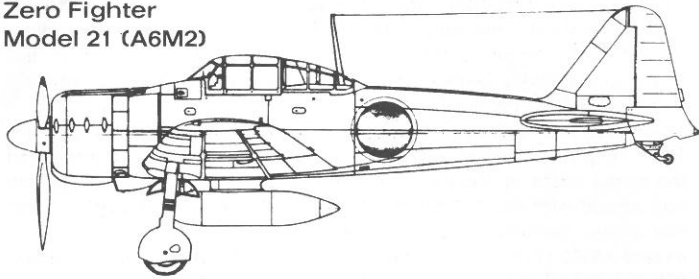


Photo offered by Aircraft News Service.  
Zero Fighter Model 52 (A6M5)

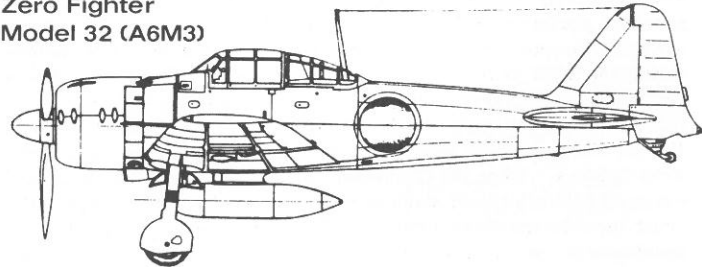
### Data on Zero Fighter Model 52

Overall Length	: 9.121m
Overall Width	: 11.00m
Overall Height	: 3.51m
Engine	: Sakae Model 21, Air Cooled Dual Radial 14 Cylinder, 1,130 HP
Maximum Speed	: 562km, 6,000m
Ceiling	: 10,950m
Total Weight, Armed	: 2,733kg
Crew	: 1
Armament	: [Model 52, Model 52A] 20mm Machine Gun x 2, 7.7mm Machine Gun x 2 [Model 52B] 20mm Machine Gun x 2, 12.7mm Machine Gun x 1, 7.7mm Machine Gun x 1 [Model 52C] 20mm Machine Gun x 2, 12.7mm Machine Gun x 3, 7.7mm Machine Gun x 1 60kg Bomb x 1, or 30kg Bomb x 2

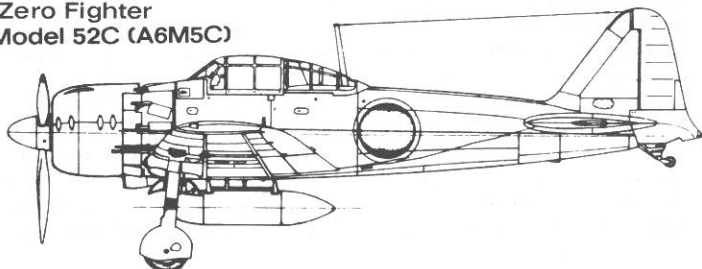
Zero Fighter  
Model 21 (A6M2)



Zero Fighter  
Model 32 (A6M3)



Zero Fighter  
Model 52C (A6M5C)



### Various Models of Zero Fighters

#### Zero Fighter Model 11 (A6M2)

12-Shi Carrier Fighter, No.3 to No.5

#### Zero Fighter Model 21 (A6M2)

After No.6, of Model II, improvements was made on both ends of the main wing to fold up 50cm. After No.27, due to the operating defect on the aileron at high speed, it was improved so that it could operate when the landing gear folded up and the aileron back tab balance was fitted on. After No.136 the tab balance was discontinued.

#### Zero Fighter Model 32 (A6M3)

Experienced in actual combat. The folding wing tip was removed and discontinued. For used on aircraft carrier, the tab balance was also discontinued. Equipped with Sakae Model 21 Engine with 1 step 2 speed supercharger, the carburetor intake was moved to the top side, cowling opened towards the front and its shape was more circular than the Model 21. Model 32 was mass produced until April of 1942.

#### Zero Fighter Model 22 (A6M3)

To augment the cruising power of Model 32, the main wing returned to its original 12m length and the wing tip fold was revived. 45 litre fuel tanks were installed each inside of the both outer wings. The diving speed was the same as Model 21, at 340 knots.

#### Zero Fighter Model 22A (A6M3A)

The 20mm Machine gun, in the wing, was changed from Type-99 No.1 Model 3 to a longer barrel Type-99 No.2 Model 3.

#### Zero Fighter Model 52 (A6M5)

Wing tip fold up was discontinued, its length at 11m and the tip rounded. Thrust type single exhaust pipe was utilized to provide a rocket effect to its exhaust. Commenced production in August of 1943, equipped with automatic extinguisher in the wing fuel tanks. Discontinued the fire extinguisher to the engine.

#### Zero Fighter Model 52A (A6M5A)

Was armed to elevate the caloric power and diving speed of Model 52. Changed to belt feed machine gun No.2 Model 4, on both wings, increased to carry 125 bullets.

#### Zero Fighter Model 52B (A6M5B)

7.7mm machine guns, on the right side of the fuselage, was changed to 13mm machine gun. Part of the model was installed with bullet proof glass just in back of the canopy in front of the pilot.

#### Zero Fighter Model 52C (A6M5C)

The armament was further intensified, in this model, with type-3, 13mm machine gun in the wing (one each at the outside of the landing gear) and 7.7mm gun for an emergency use. 4 of 30kg rocket bomb on suspension under the wing.

#### Zero Fighter Model 53C (A6M6C)

Equipped with Sakae Model 31 engine and bullet proof fuel tank on the wings, but was not produced in quantity.

#### Zero Fighter Model 63 (A6M7)

Carried 250kg bomb under its fuselage.

#### Zero Fighter Model 54C (A6M8C)

Trial model equipped with Kinsei engine.

#### Zero Fighter Model 64 (A6M8)

Model for mass production of model 54C. War ended before its first plane was finished.

#### Zero Trainer Fighter

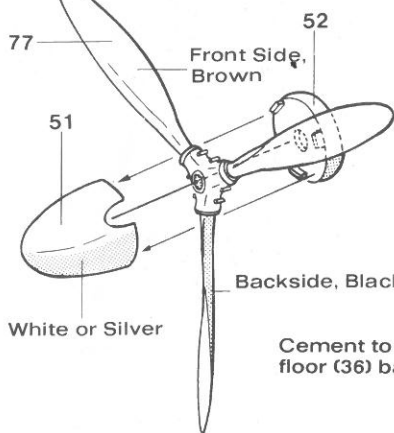
Model 21 was remodeled to two seater trainer.

#### Zero Trainer Fighter Model 22

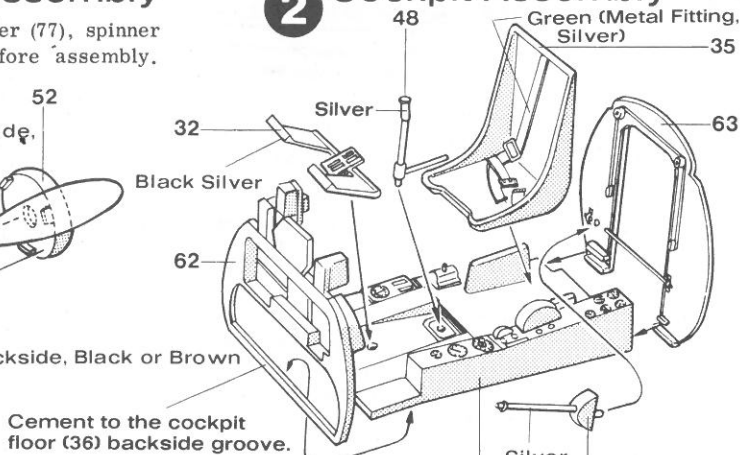
Model 52 was to be remodeled to the two seater trainer, but the war ended while in production.

# 1 Propeller Assembly

\* Paint propeller (77), spinner (51) (52) before assembly.



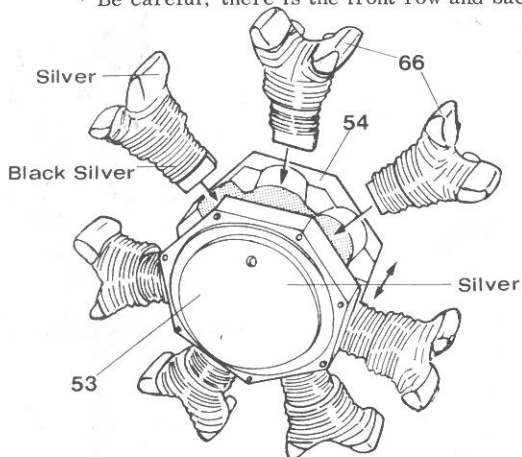
# 2 Cockpit Assembly



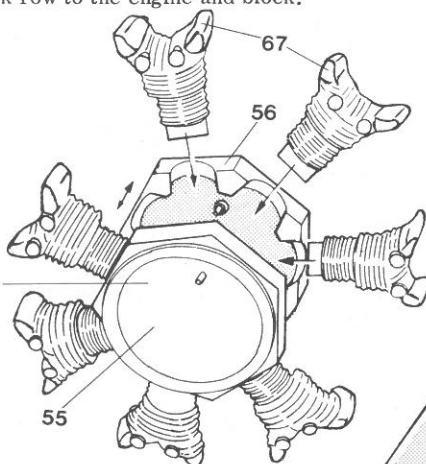
\* Paint the cockpit sides malachite green, instrument panel black and the meter needles white.

# 3 Engine Assembly (1)

\* Assemble engine block (55) (56) and (53) with (54), and then cement the engine (66) and (67).  
\* Be careful, there is the front row and back row to the engine and block.



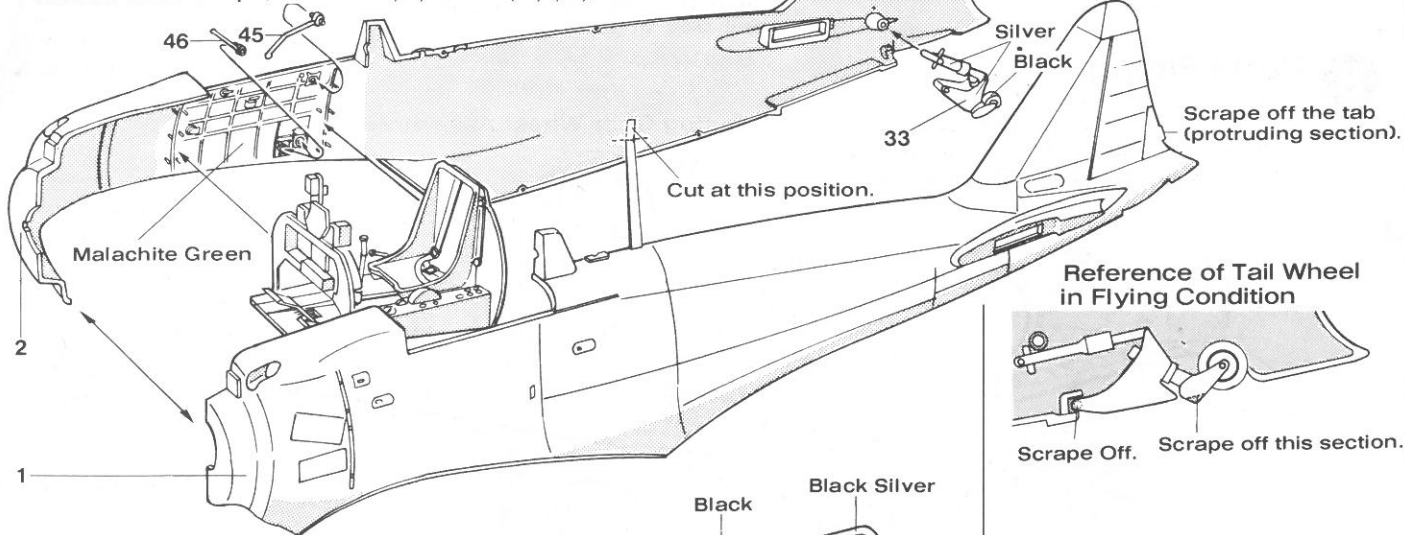
Back Row Engine



Front Row Engine

# 4 Fuselage Assembly

\* First fit on the cockpit, tail wheel (33) levers (45) (46).

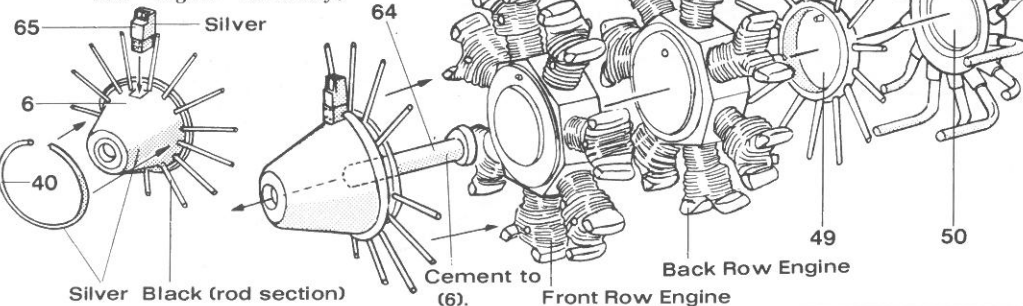


Reference of Tail Wheel in Flying Condition

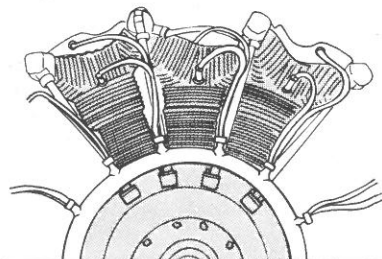


# 5 Engine Assembly (2)

\* Cement the front and back row engine correctly.



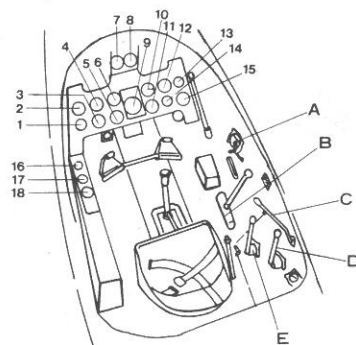
Engine Reference



# Read This before Assembling

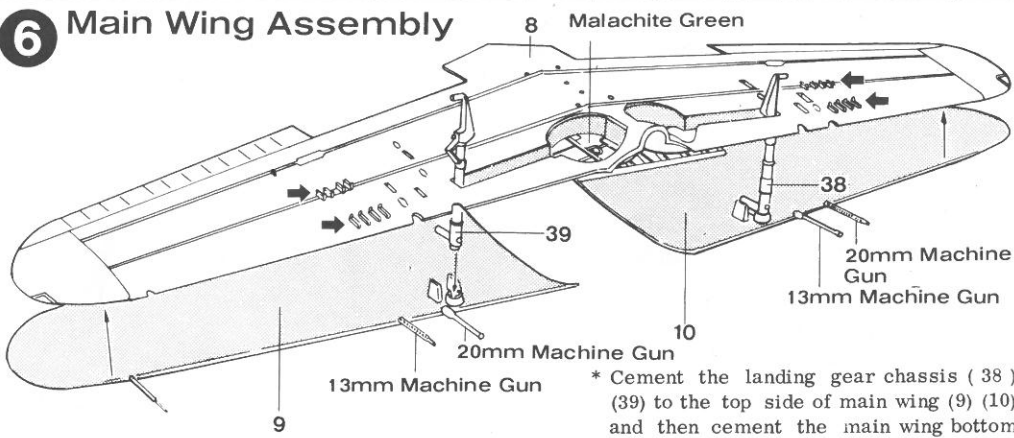
- \* Carefully read the instruction before assembling your model and follow the instructions.
- \* This kit can be made to any of the four models... Model 52, Model 52A, Model 52B, Model 52C; therefore decide what mode you will construct.
- \* Carefully cut off the parts from the stem with a knife or clipper.
- \* Unless instructed, use semi-gloss or mat finish paint for plastic.

# Cockpit Reference



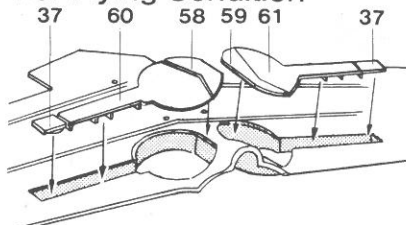
1. Direction Gyro
  2. Exhaust Heat Indicator
  3. Change-over Switch
  4. Clock
  5. Altimeter
  6. Speedometer
  7. Artificial Horizon
  8. Inclometer
  9. Gyro Compass
  10. Climb and Descent Indicator
  11. Cylinder Temperature Gauge
  12. Fuel Pressure Gauge, Oil Pressure Gauge
  13. Revolution Meter
  14. Oil Temperature Gauge
  15. Booster Gauge
  16. Outside Air Thermometer
  17. Fuselage Fuel Tank Gauge
  18. Wing Fuel Tank Gauge
- A. Arresting Hook Drawing-Out Lever  
B. Emergency Hand Pump  
C. Arresting Hook Drawing-In Lever  
D. Flap Hydraulic Control Lever  
E. Landing Gear Lever

## 6 Main Wing Assembly

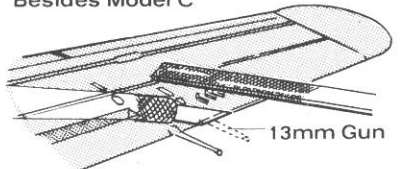


\* Cement the landing gear chassis (38) (39) to the top side of main wing (9) (10) and then cement the main wing bottom side (8).

### For Flying Condition

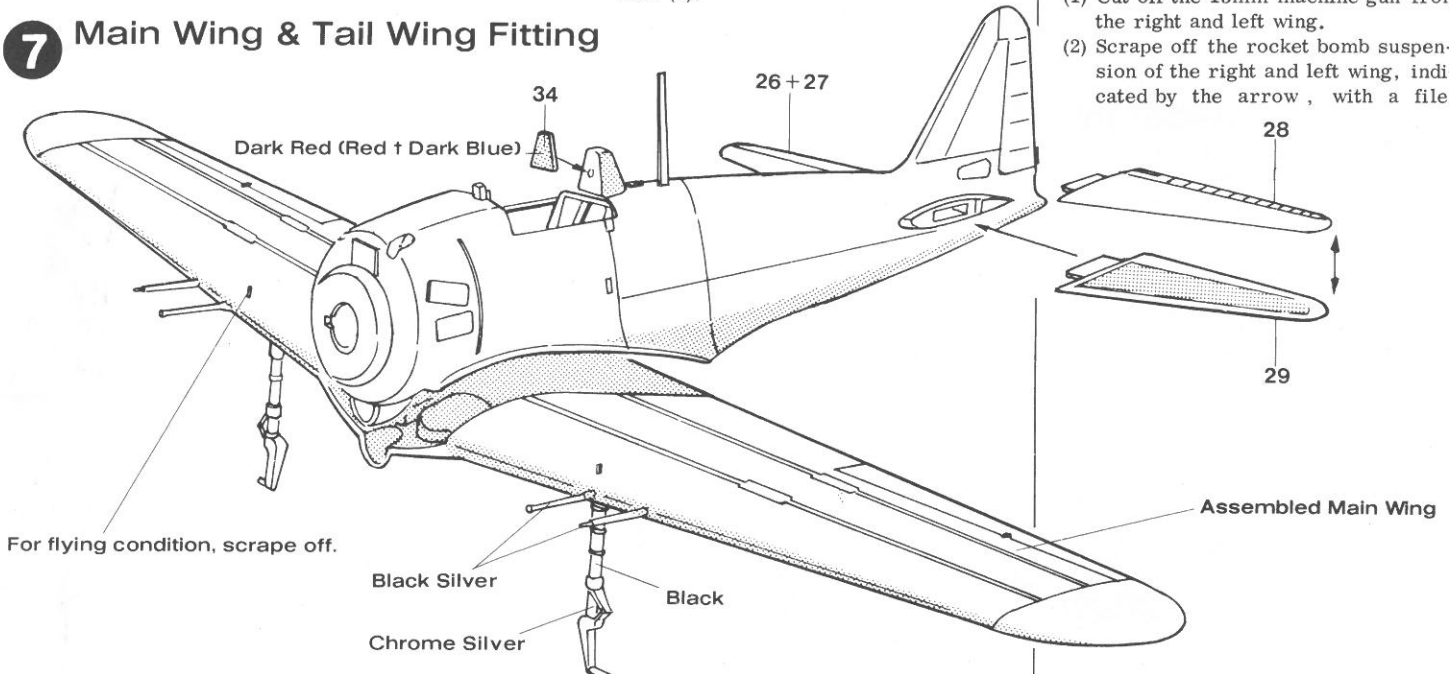


### Besides Model C



- (1) Cut off the 13mm machine gun from the right and left wing.
- (2) Scrape off the rocket bomb suspension of the right and left wing, indicated by the arrow, with a file.

## 7 Main Wing & Tail Wing Fitting



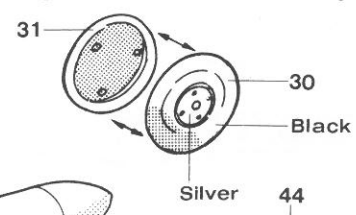
For flying condition, scrape off.

\* Cement the tail wing top side (28) (26) to the tail wing bottom side (29) (27), and then fit it on to the fuselage.

## 8 Parts Fitting

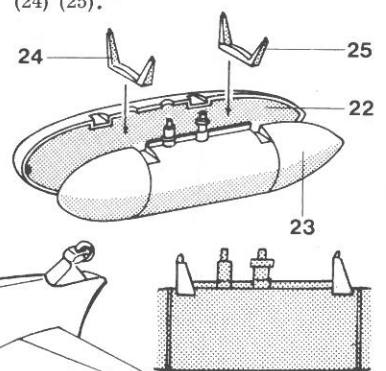
- \* First fit on the assembled auxiliary fuel tank and then fit on the landing gear cover (58) (59).
- \* For the main wing flap in the closed condition, cut off the section indicated by the arrow.

### Landing Gear Wheel Assembly



### Auxiliary Tank Assembly

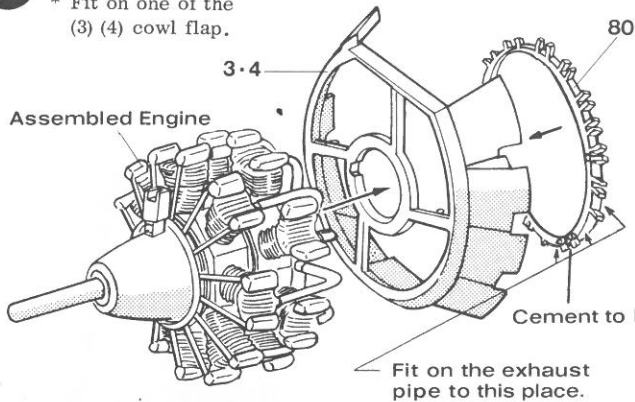
\* Cement tank left and right (22) (23) and then fit it on to the suspension (24) (25).



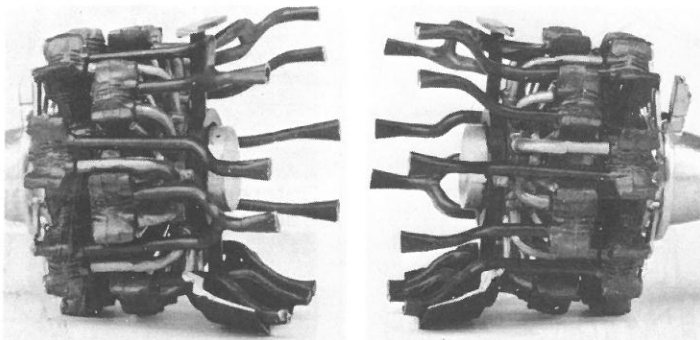
\* Paint the flap and the landing gear cover, facing the inside, malachite green.

## 9 Cowl Flap, Exhaust Pipe Fitting

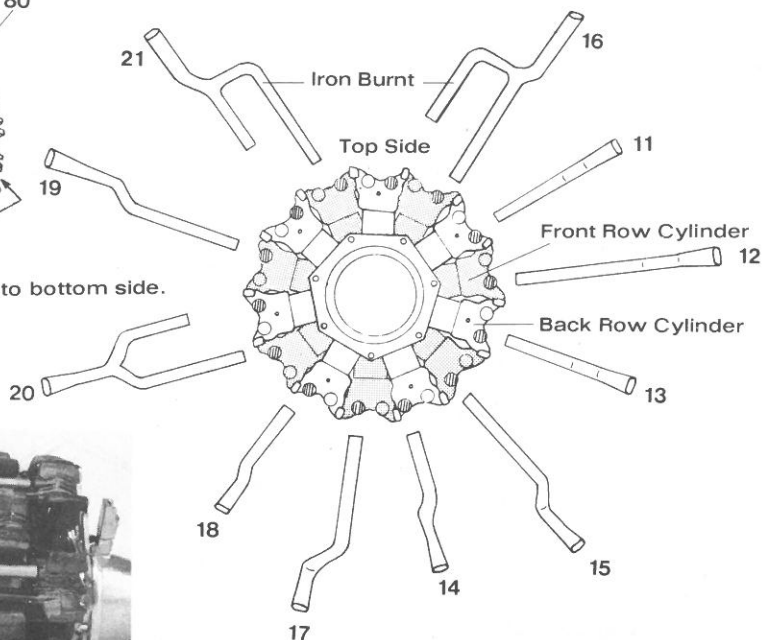
\* Fit on one of the (3) (4) cowl flap.



Reference Picture



Exhaust Pipe Fitting Reference Drawing (from the back side of the engine)

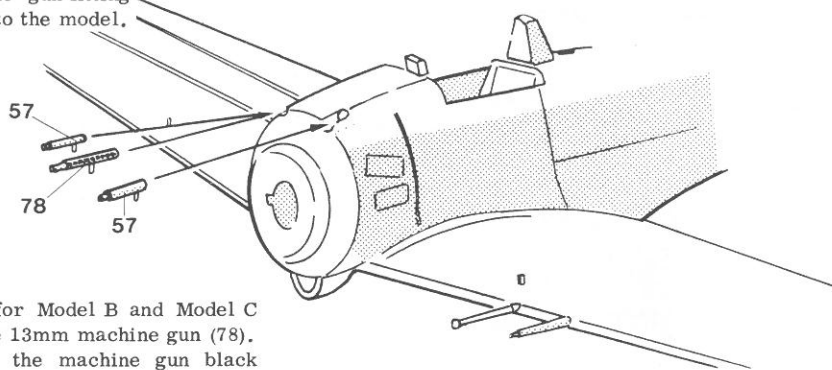
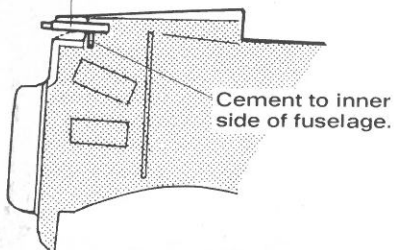


\* For the correct identification, paint the exhaust pipes still on the stem and cut off them one by one in accordance with the fitting procedure.

\* Cement the exhaust pipe to the engine and then fit it to the fuselage and cement. (Refer to the drawing in 10.)

## 10 Machine Gun Fitting

\* The right side machine gun fitting Machine Gun (57) (58) is different, according to the model.



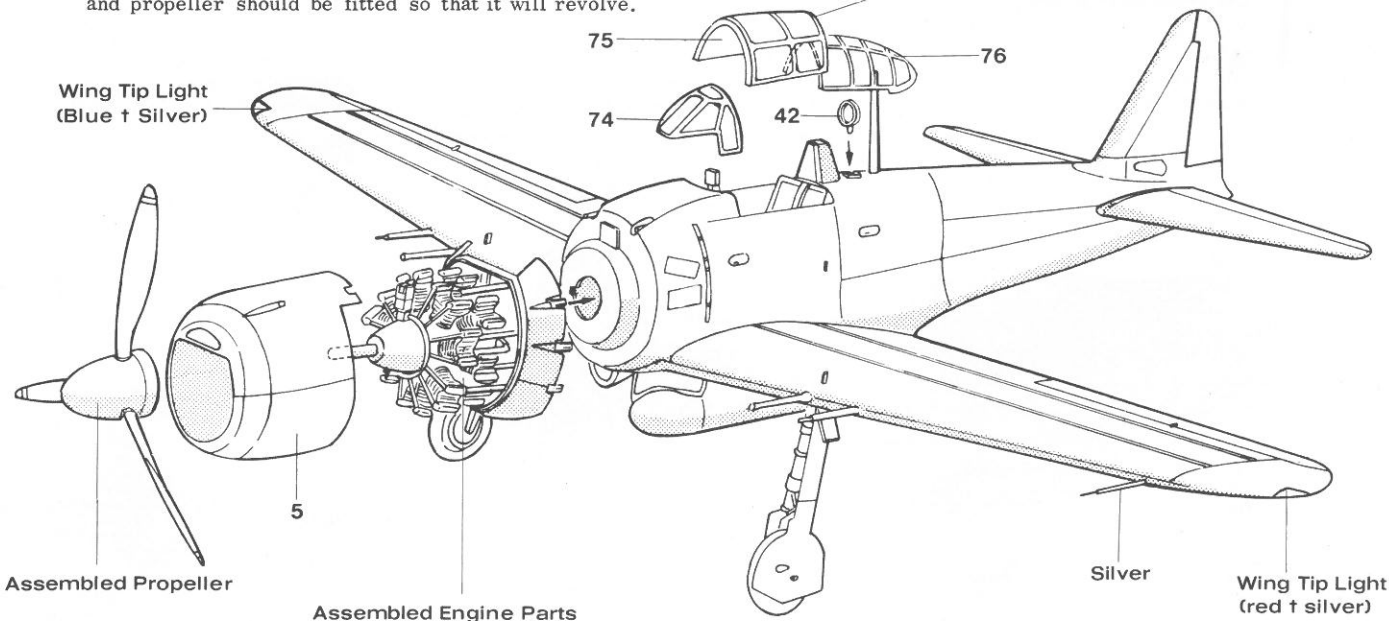
\* Only for Model B and Model C fit the 13mm machine gun (78). Paint the machine gun black silver.

## 11 Parts Fitting

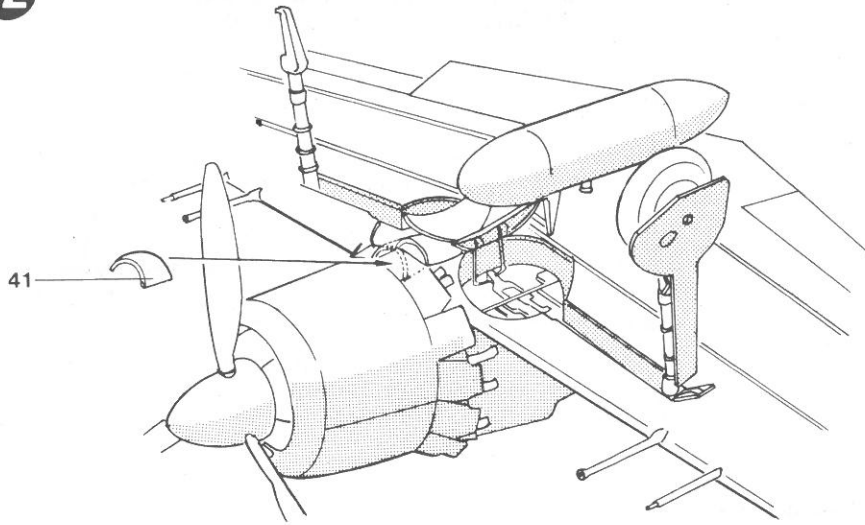
\* After the loop antenna is fitted to the fuselage, fit on the painted canopy.

\* The engine is cemented to the fuselage, but the cowl and propeller should be fitted so that it will revolve.

The side of the rounded edge is to the back.

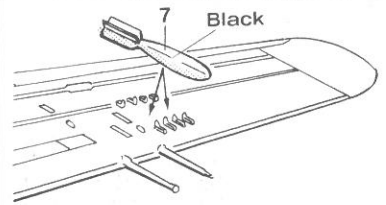


## 12 Air Intake Fitting

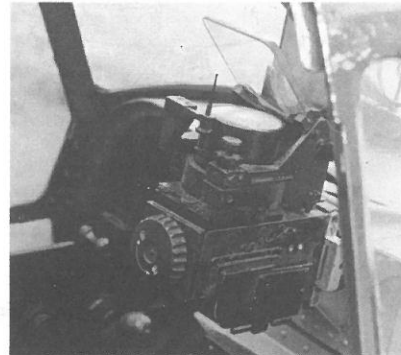


## Rocket Bomb Fitting

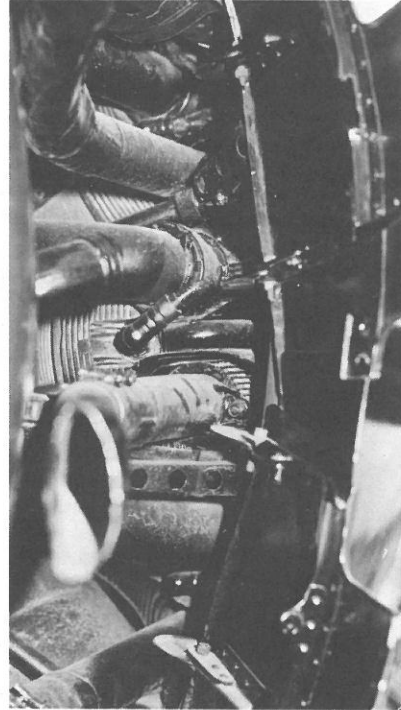
\* The fitting is only for Model C.



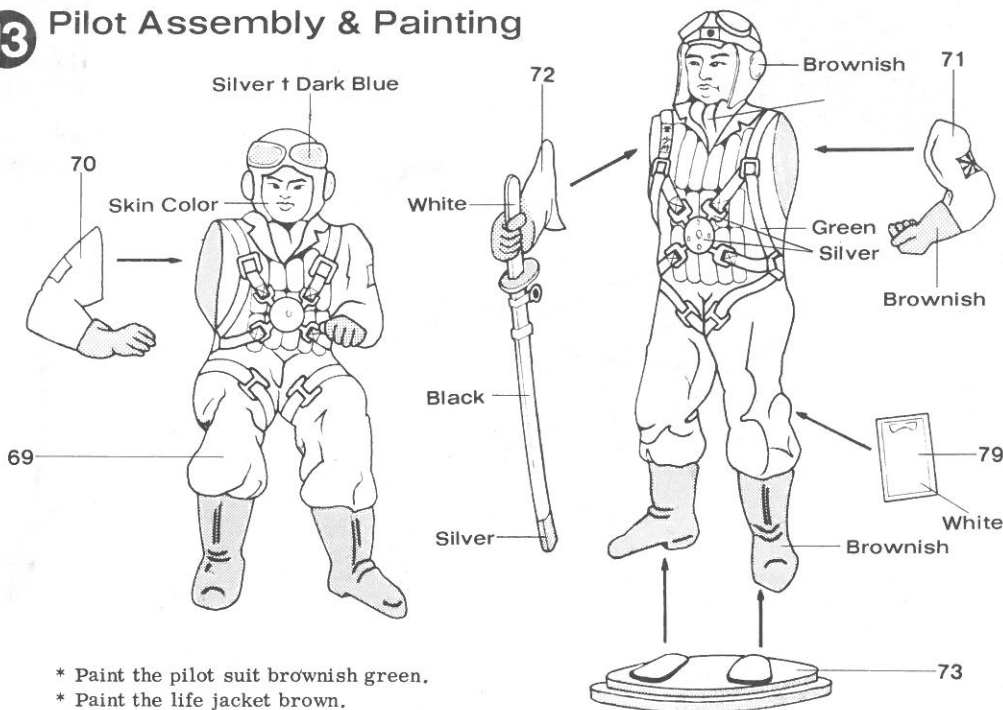
Reference Picture on Gun Sight (Restored Plane)



Reference Picture on Engine Section (Restored Plane)

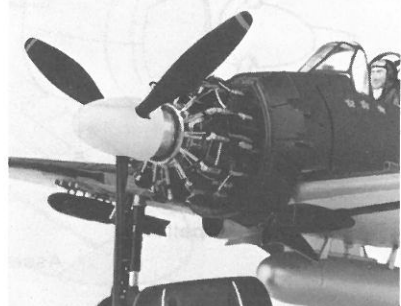


## 13 Pilot Assembly & Painting



- \* Paint the pilot suit brownish green.
- \* Paint the life jacket brown.

Completed Picture



## Method to Apply the Decals

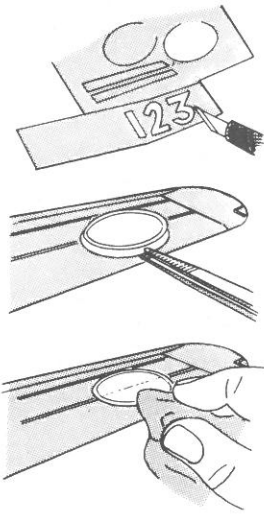
(1) Cut out the decal, to be used, from the card board and trim off the transparent side (not printed). (Refer to Drawing 1).

(2) Dip the decal into a lukewarm water until the cardboard curls and then remove. Wait until the cardboard returns to its original flatness; then it is ready to be transferred.

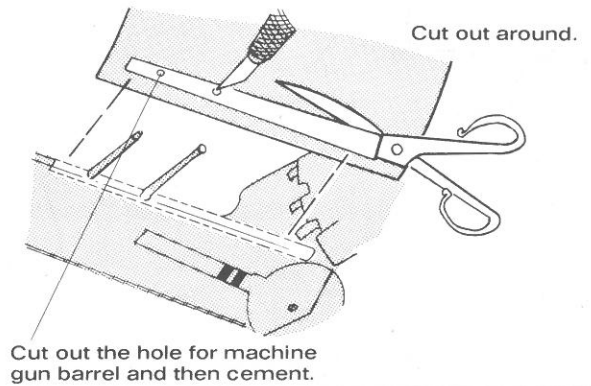
(3) Lightly press the edge of the decal with the finger and when it slides smoothly bring it to the surface of the model. (Refer to Drawing 2.)

(4) Slightly move the decal until it protrudes about 2 - 3mm off the edge of the cardboard. Then place the decal on the prescribed place and lightly press it and remove the cardboard by sliding it off.

(5) Press the decal with a soft cloth that absorbs water and remove the moisture around the decal. Make sure the decal is positioned correctly and press it firmly to remove the moisture underneath and so that it adhere on the model. The place where the decal is to be transferred must be cleaned of any dust or oiliness.



## Friendly Side Identification

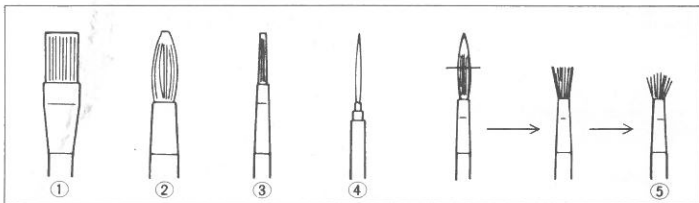


## Painting

To beautify the model paint the parts. To paint the colors so that it appears fresh, the important thing is basic painting method and selecting the proper tools, and to repeatedly practice until you get the correct knack. The dust on the surface of the model must be cleaned off, and the oiliness of your hand should be washed off. Also the cement that is protruded on the parts must be removed with a knife or a fine sandpaper so that the surface is smooth.

## Painting Tools

Use a water color painting brush whose tip is soft. Wide and narrow brushes of various sizes should be ready for use, varying to the sizes of the parts. To dissolve or mix the paints, use a jar with a wide mouth. To clean the brushes have the lacquer thinner ready; after painting, to preserve the brush, remove the paint from the brush with the lacquer thinner and then wash it with water and dry it.



- (1) Flat Brush: Wide Used to paint flat surfaces. A soft tip water color brush should be ready on hand and the tip thickness should be 1/2 - 1/3 of the width.
- (2) Round Brush: To paint small parts. Same as the flat brush, use a round brush for water color painting.
- (3) Narrow Brush: To paint the lines around the canopy frame and on the fuselage.
- (4) Profile Brush: To paint the pilot's face, fine paint work on the suit.
- (5) Scumble Brush: Cut off the tip of an old and used brush, and lightly burn it. Lightly tap the brush with just a small amount of paint on the tip.

## Painting Small Parts

Since the small parts cannot be completely painted while it is on the stem, remove it from the stem before painting. Corrects the parts, with a file or knife, removing the burrs, lines created by the metal moulding, and places where the level is different, and then paint it. To paint the propeller, wheels and parts which has holed, insert a toothpick through it and paint. To set it to dry stick the toothpick tip into a putty-like base. For parts without holes, use a clip to stabilize the parts and then paint it.

## Paint

There are lacquer paint (different from the regular lacquer) that will not dissolve the plastic and enamel paint. Lacquer paint will dry fast. The painting should be done so that it leaves no brush marks. On the otherhand enamel paint dries slowly and does not leave any brush marks.

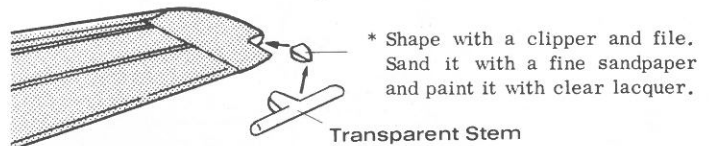
## Detail Construction....

to bring out the realistic appearance.

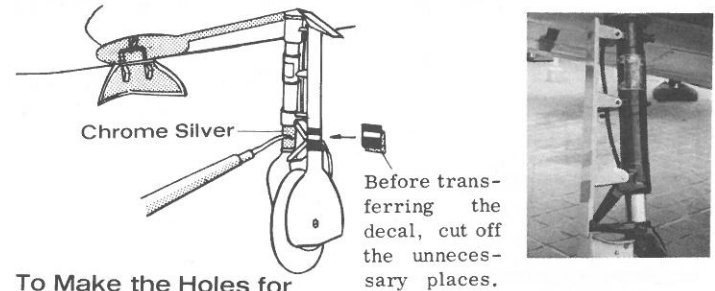
By following the instruction the model can be completed. But its realistic appearance can be brought out with added work. Refer to the below samples and the reference pictures.

## Wing Tip Light

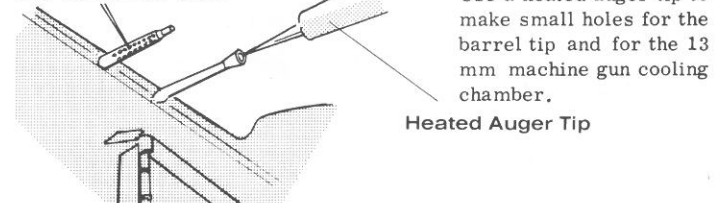
- \* File off the wing tip light and replace it a light made out of the transparent stem.



**Landing Gear Assembly:** Use the picture of the real plane as reference and fit on the brake pipe and others.

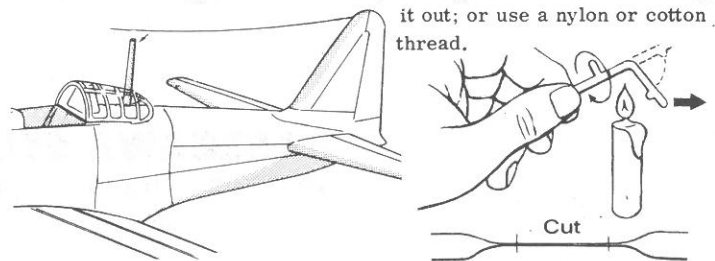


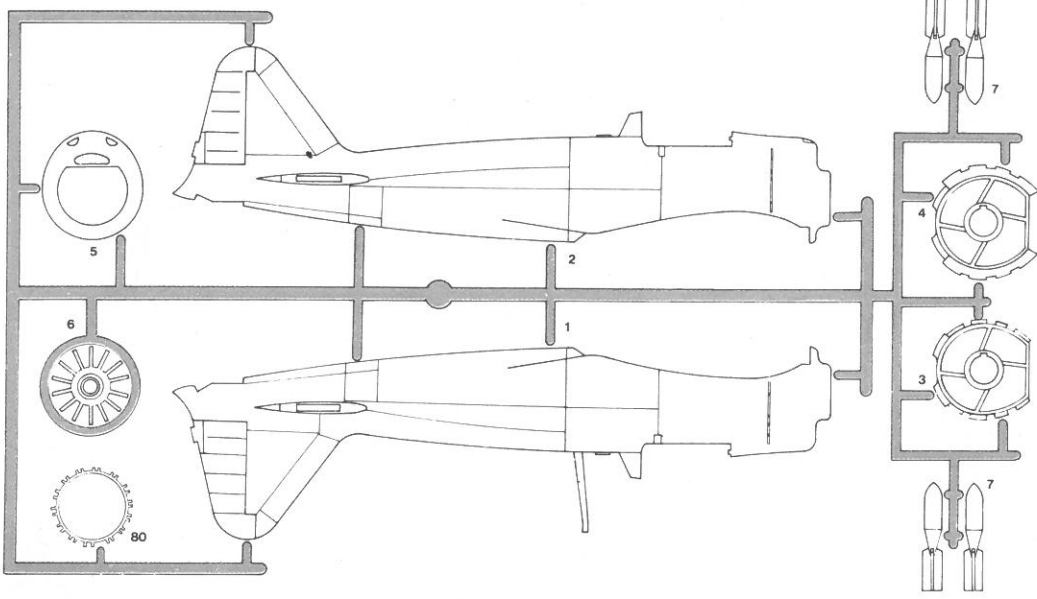
## To Make the Holes for the Machine Gun



Use a heated auger tip to make small holes for the barrel tip and for the 13 mm machine gun cooling chamber.

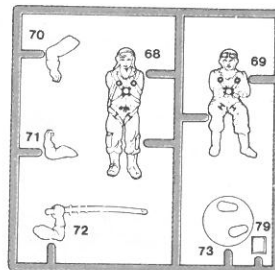
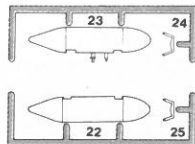
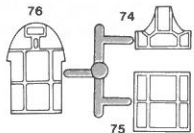
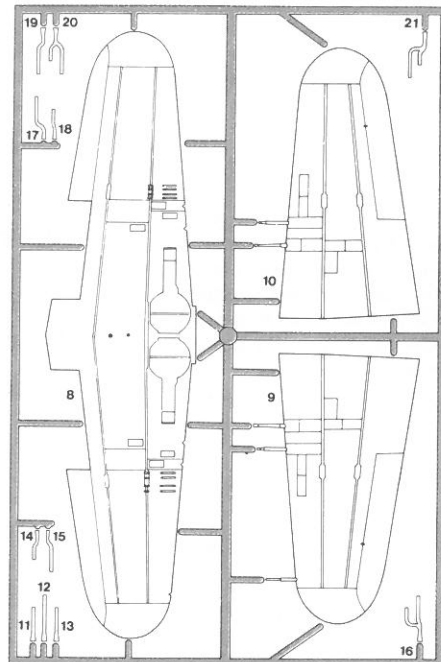
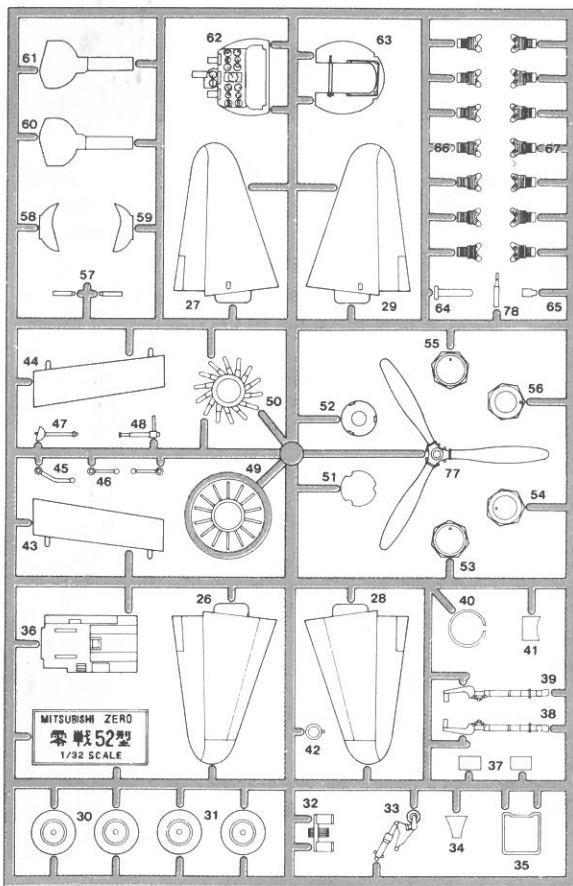
**Antenna Wiring** Make the wire by heating the stem and stretching it out; or use a nylon or cotton thread.





## Name of Parts

1. Fuselage, Left
  2. Fuselage, Right
  3. Cowl Flap, Closed Position
  4. Cowl Flap, Open Position
  5. Cowling
  6. Front Row Push Rod
  7. Rocket Bomb
  8. Main Wing Bottom
  - 9,10. Main Wing Top
  - 11-21. Exhaust Pipe
  - 22,23. Auxiliary Fuel Tank
  - 24,25. Auxiliary Fuel Tank Suspension
  - 26-29. Tail Wing
  - 30,31. Main Landing Wheel
  32. Foot Pedal
  33. Tail Wheel
  34. Head Rest
  35. Seat
  36. Cockpit Floor
  37. Main Landing Gear Door (A)
  - 38,39. Main Landing Gear Strut
  40. Wiring Ring
  41. Air Intake
  42. Loop Antenna
  - 43,44. Flap
  - 45,46,47. Lever
  48. Control Stick
  49. Tappet Rod
  50. Intake Manifold
  - 51,52. Spinner
  - 53,54. Back Row Engine Block
  - 55,56. Front Row Engine Block
  57. Machine Gun (7.7mm)
  - 58,59. Main Landing Wheel Cover
  - 60,61. Main Landing Gear Cover (B)
  62. Instrument Panel
  63. Back Partition
  64. Propeller Shaft
  65. Engine Parts
  66. Back Row Engine
  67. Front Row Engine
  68. Pilot A
  69. Pilot B
  - 70,71,72. Parts for Pilot
  73. Stand
  - 74,75,76. Canopy
  77. Propeller
  78. Machine Gun
  79. Parts for Pilot
  80. Exhaust Pipe Retainer
- Name Plate  
Decals  
Painting Reference Picture  
Adhesive



**HASEGAWA SEISAKUSHO CO., LTD.**  
No.1193-2, Yagusu, Yaizu, Shizuoka (425) Japan



# 零戦 MITSUBISHI ZERO FIGHTER



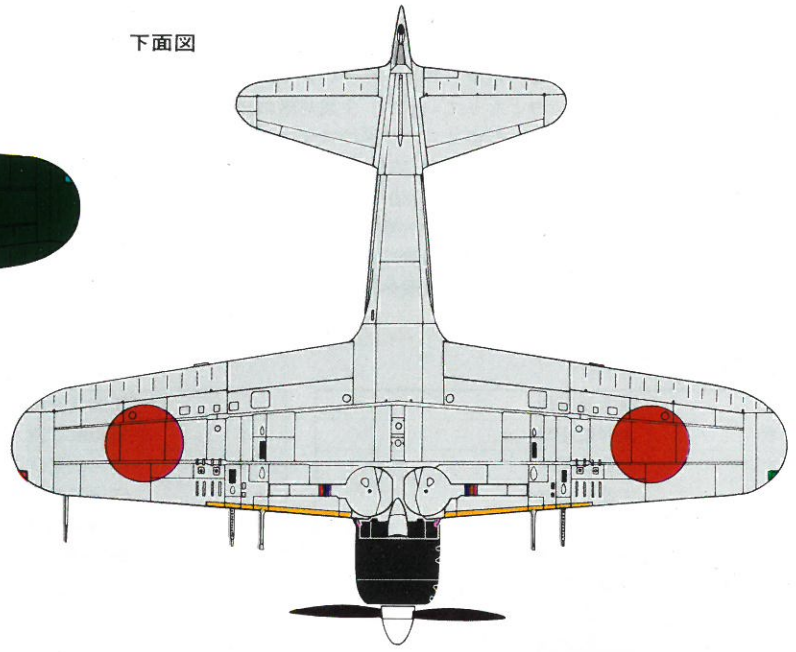
日本海軍零式艦上戦闘機52型 (A6M5, A6M5A, A6M5B, A6M5C)

《ハセガワ カラーガイド》

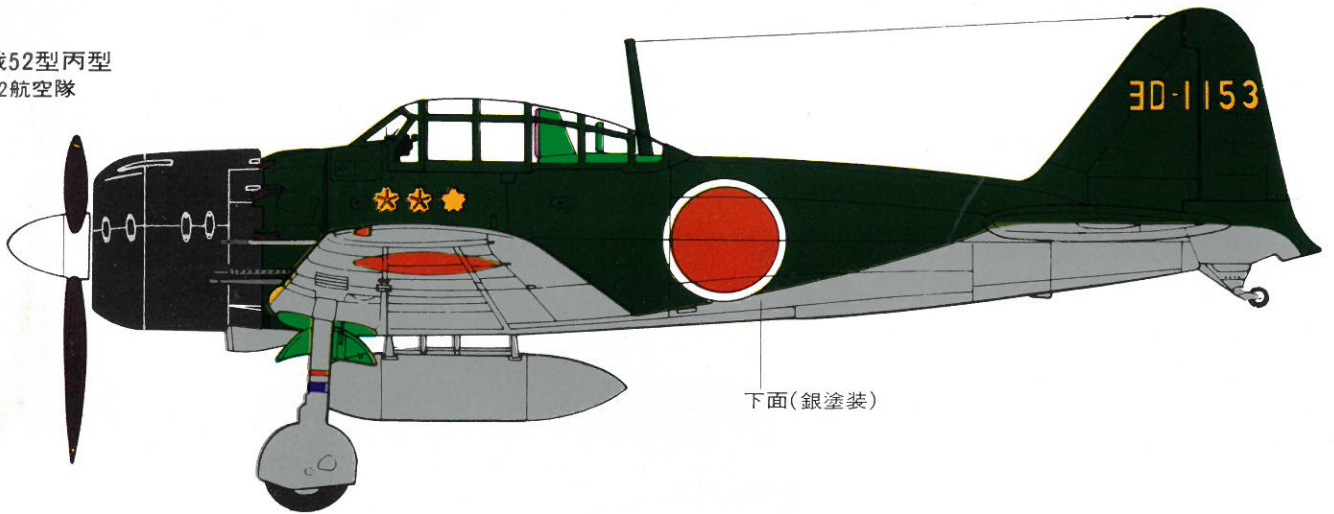
標準塗装  
上面図



下面図

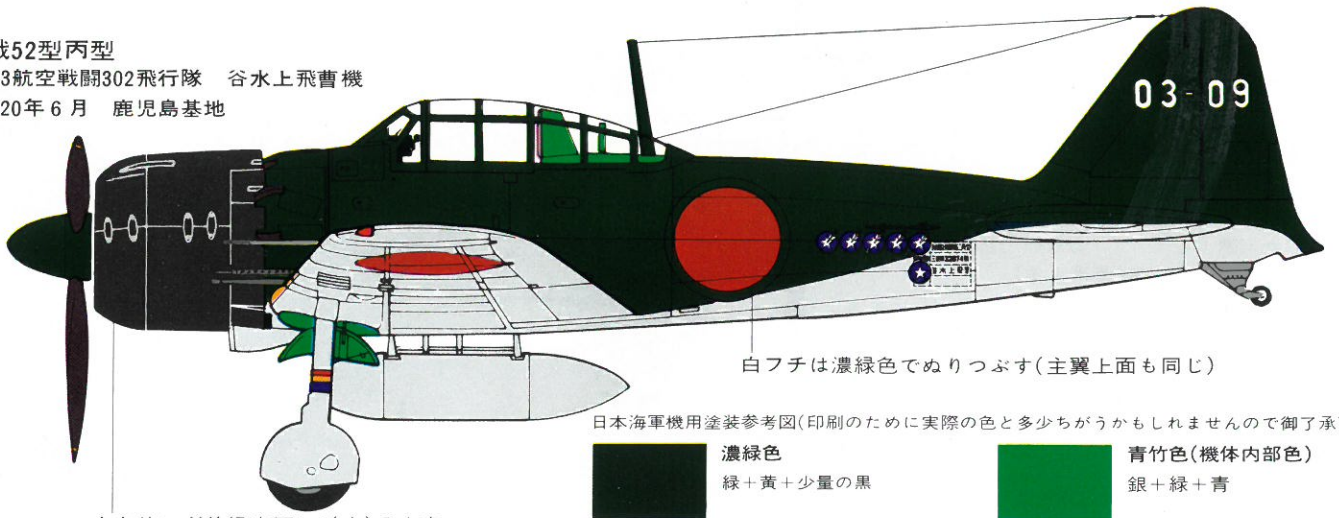


零戦52型丙型  
第302航空隊



下面(銀塗装)

零戦52型丙型  
第203航空戦闘302飛行隊 谷水上飛曹機  
昭和20年6月 鹿児島基地



白フチは濃緑色でぬりつぶす(主翼上面も同じ)

カウリング前縁直下に9(白)の文字

日本海軍機用塗装参考図(印刷のために実際の色と多少ちがうかもしれませんが御了承下さい。)

	濃緑色 緑+黄+少量の黒		青竹色(機体内部色) 銀+緑+青
	明灰白色 白+ごく少量の黒, 黄, 青		オレンジイエロー 黄+ごく少量の赤
	茶褐色 赤+黄+少量の黒		黒銀色 黒+銀

# 零戦 MITSUBISHI ZERO FIGHTER

1/32スケールシリーズ  
日本海軍零式艦上戦闘機52型

## 《零戦の塗装について》

零戦52型の塗装は上面濃緑色、下面明灰白色です。これは昭和18年7月3日の海軍航空本部長の通達により全面的な塗装の変更がなされてからのものです。この塗装機はプロペラの無塗装はほとんどなく両面茶褐色が表面茶褐色、裏面黒で、先端には太い黄色い線が1本かかれています。スピナーはプロペラや機体と同色か又は赤や白となっています。主翼前縁の黄色（オレンジイエロー）の味方識別塗装がされたのはこの塗装の機体です。戦争末期には下面の塗装を省略した機体も使われました。又302航空隊に配属された夜戦型は上面黒、下面無塗装銀でした。日の丸は原則的には白フチつきとなりますが、昭和20年頃には胴体と翼上面の白フチは射撃の目標になりやすいため、航空本部からの命令で消されました。この時期に飛行していた作戦機は応急的に手塗りで消したので、そのあとがわかる機体が多くありました。カウリングは反射よけの黒で塗装されました。

## 《航空隊記号》

アツ	厚木航空隊
オ	大村航空隊
オタ	大分航空隊
オミ	大湊航空隊
カ	霞ヶ浦航空隊
カイ	海口航空隊
カヤ	鹿屋航空隊
ク	呉航空隊
ケ	元山航空隊
ゲン	元山航空隊
コ	空技廠航空隊
コウ	神の池航空隊
サ	佐世保航空隊
サへ	佐伯航空隊
サン	三亜航空隊
タイ	台南航空隊
タカ	高雄航空隊

ツ	筑波航空隊
ツイ	筑城航空隊
トク	徳島航空隊
ヨ	横須賀航空隊
ヤ	谷田部航空隊
2	452航空隊
3	12航空隊
4	13航空隊
21	221航空隊
43	343航空隊
52	452航空隊
61	261航空隊
81	281航空隊
131	南方諸島航空隊
201	201航空隊
203	203航空隊
205	205航空隊

210	210航空隊
221	221航空隊
252	252航空隊
254	254航空隊
331	331航空隊
341	341航空隊
381	381航空隊
601	第1航空戦隊
634	第4航空戦隊
652	第2航空戦隊(652航空隊)
653	第3航空戦隊
722	722航空隊
ヨD	302航空隊
KEA	海上護衛航空隊
嵐	221航空隊
神	721航空隊

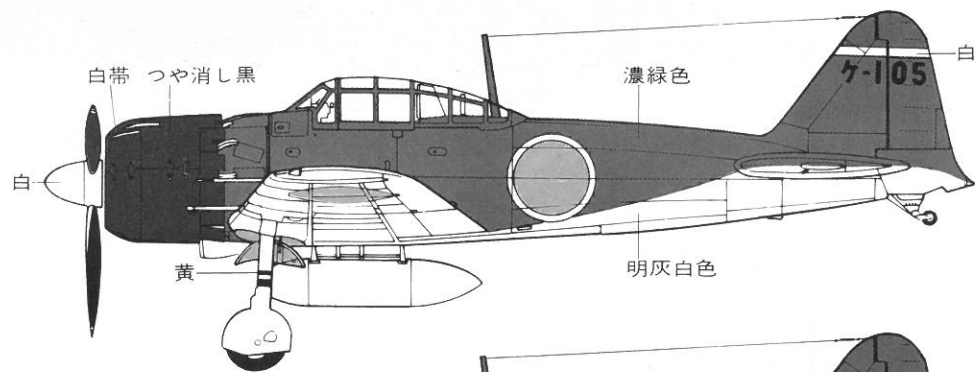
## 《零戦の記号》

太平洋戦争初期の空母搭載機は航空戦隊をしめすローマ数字を組み合わせてA I ~ I IIIと表示していましたが、昭和17年秋海軍航空隊の編成改正が行われ航空隊名はすべて番号航空隊に改称されました。又尾翼の番号も基地司令決裁となり、航空隊名と100番台の戦闘機番号を記入するようになりました。さらに昭和18年から19年にかけて再び編成改正があり、それぞれ司令の許可で番号を書き入れるようになったため343航空隊の88号機は343-188と書き入れるのを43-188と記入、数字の一部が省略されるようになったり、独自の記号を入れたりして統一されなくなりました。又日本内地にあった陸上基地所属の機体にはカタカナ文字による記号が記入されました。又1100番台の機体番号が記入されているのは、同一基地内に他の戦闘機が配属されていることを示します。又練習機はカウリングだけが黒で他はオレンジ色で塗装されました。この場合尾翼の記号は黒字で機体番号は400番台が付けられました。

## 《部隊マーク参考図》

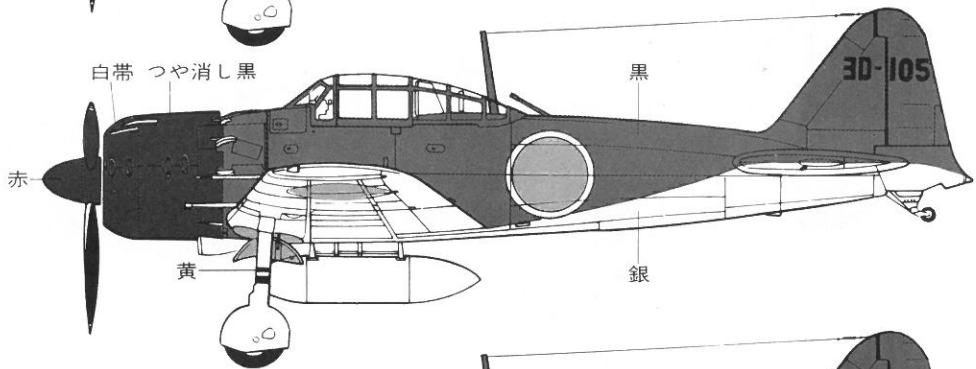
### 零戦52型 元山航空隊

- 上面・濃緑色
- 下面・明灰白色
- スピナー・白
- プロペラ・表面-茶褐色(黄帯1本)
- 裏面-つや消し黒



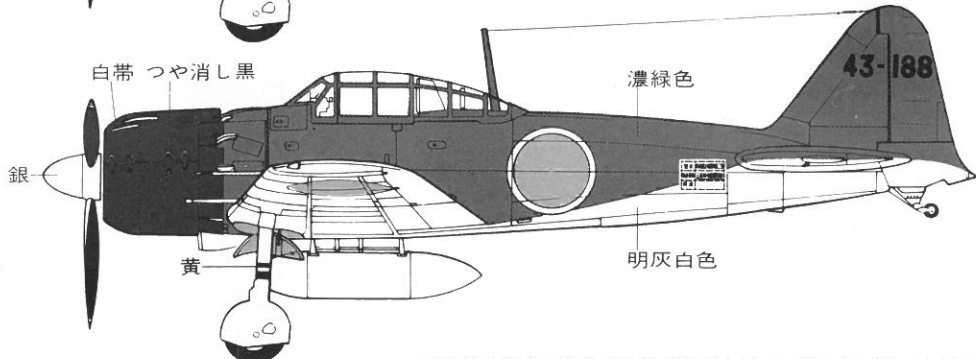
### 零戦52型夜戦 302航空隊

- 上面・黒(半光沢)
- 下面・無塗装銀
- スピナー・赤
- プロペラ・表面-茶褐色(黄帯1本)
- 裏面-つや消し黒



### 零戦52型甲型 343航空隊

- 上面・濃緑色
- 下面・明灰白色
- スピナー・銀
- プロペラ・表面-銀(黄帯1本)
- 裏面-つや消し黒



★この機体はグアム島から返還されたものです。