JAPANESE ARMY HEAVY BOMBER TYPE 4 HIRYU KI-67-PEGGY

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Famous Japanese Military Bomber, of which name was well known as Hiryu rather than Heavy Bomber Type 4, was completed at the end of the Pacific War. Its ability was superior to that of B-25, B-26 and exceeded world level. The U.s. Army also called it "Peggy" and rated it high.

However, it was unlucky machine which ended without having good place in which it played an active part. Indeed, it could not have good chance to take part in actual fighting. It only took part in battles of off Taiwan (Formosa) and off Kyushu.

FROM TRIAL TO PRODUCTION OF HIRYU

In 1940, water-drop shaped cover made of metal was fitted to the side of the body of Military Heavy Bomber Type 97 Model III (trial machine no. 3003) that was the basic test of the so-called "Sponon".

In succession, semicircular canopy was fitted to the rear upper part of the body and change of maximum speed was measured. It was a part of basic test made by Military, cooperating with research at Mitsubishi in order to cellect materials as for tactical bomber in which speed was considered as an important matter. That is to say, ability of "Donryu" (Ki-49), Military Heavy Bomber Type 100 which was completed in August, 1939 was not satisfactory and so, disappointed Military unofficially announced Mitsubishi in December, 1939 to investigate hi-speed tactical bomber under their fresh plan. Test had been continued since the time of September, 1940 when unofficial announcement of making trial machine was given and after the test by full-sized model in January, 1941 instruction of making officially trial machine was granted in Mitsubishi by nomination. (In June, 1942, additional instruction of strengthening bombing and firing equipment was also given.) Considering principal items of instruction making of trial machine, it was precedence of speed, aiming at bombing a ground unit. (Navy took a cruising power first.)

CONTENTS OF INSTRUCTION

USE: Destruction of machines at the hostile airdrome and bombing of a ground unit

ABILITY: Normal altitude: 2,500-4,380 miles (4,000-7,000 meters), regular action radius: 625 miles (1,000 1,000 km.), specially loaded action radius: over 940 miles (over 1,500 km.), time to spare: 2 hours, maximum horizontal speed: over 345 miles (over 550 km.)

CREW: 6-8

SEAT: 9-10

OUTFIT: Standard loaded bomb 1,100 lbs. (500 kg.), maximum loaded bomb: 1.650 lbs. (750 kg.), armament: 7.7 m/m machines gun ×3, 13m/m×2

NUBERS OF TRIAL MACHINES: Machine no. 1 was scheduled to be completed in August, 1941. August.

In making trial machine of Ki-67, at Mitsubishi, works were begun under the chief of drawing section of Mr. Kawano's guidance together with Mr. Ozawa, drawing engineer as a head. First trial machine was completed in December, 1942 which was a year and ten months since start, and first fly was satisfactorily made on 27th at Kagamigahara airdrome, Gifu Pref. by two pilots named Oda and Yamaguchi. In succession, first fly of second machine was made in February, 1943 and third machine in April, 1943.

After improvement of the result of tests, it became nice machine of which light control performance far exceeded that of twin-engined Light Bomber Type 99 (Ki-48) and when bombs were not loaded, it could, easily turn loops and also, circle vertically.

Utilizing good ability of Hiryu, both Military and Navy made numerous machines with special equipments and one of the most famous one among them were Yasukuni, Torpedo Bomber and Ki-109, Experimental Intercepter Fighter.

Although mass production was set in from April, 1944, owing to the earthquake visited to Tokai district in December, 1944 and also, to calamities at Ooe Factory, Nagoya caused by air raids of B-29, obstacles to let the factory decentralize and disperse occured in succession.

Although Kawasaki Nagoya Factory cooperated in production, production of 606 machines at Mitsubishi and 91 machines at Kawasaki were completed before the end of the War.

CONSTRUCTION AND ARMAMENT OF HIRYU

Points in which Hiryu was different from usual bomber lied in that it could make fair swoop and prevented damage from ground gunfire by flying super low altitude flight over the fence. Also, it could make a long-distance flight with heavy materials and at the same time, the body was made small as much as possible, by which vertical stabilization was improved. Owing to it, diameter of the fuselage became small which gave very smart appearance and yet, passing inside the fuselage was easy. In order to improve vertical stabilization, the fuselage was long and tail plane was small. However, for the purpose of keeping bombing course correctly, area of vertical tail plane was large.

For engine, Ha-104 with cooling fan was adopted which was most reliable one even in case of single engine flight. Peculiar sound "Ki-n" to Hiryu came from cooling fan and only Hiryu made such a sound among all Japanese machine.

For propeller, 4 panelled full-feathering system was adopted, which was made at Sumitomo, but owing to failure of electric parts, sometime accidents occured.

In order to defend itself against enemy's attack in the air, under necessity of flying in close for mation, a gauge and a control lever, etc. were fitted to the right pilot seat, which was hitherto considered simply as a spare seat, by which left and right seat became completely same. There fore, by whichever seat pilot might control, close formation was assembled. Further, as engineer's seat was prepared at the back of above seats, in case of need, the said three members could closely consult together. The center part of the floor was transparent so that they might look the ground, by which also, a drift measurement could be done. As pilot seats located ahead of propeller, reflected light and fire of exhaust pipe at the time of a night flight did not obstruct them and owing to it, it was said that control of pilot became very easy. For windscreen glass, by using curved surface strengthened-glass which was unprecedent at that time, the field of vision became wide in the upper, side and lower parts.

Further, in order to widen the field of vision of bombing seat, it was all glazed and the construction was special framed one by welding steel pipes. As the body was long, inclination of the machine at the ground was very slow and also, as the field of vision at the time of flying off and

landing was rich. So, pil to were pleased at Hiryu. Indeed, it might be safely said that surrounding of pilot's seat was far superior to other machines by that time.

Fire protection was thoroughly made by putting considerable weight on it which was exceeded all other Japanese machines. The lower surface inside the wing was made as same as the outside of main planes and even if they were bombed, gasoline was discharged outside. The tank inside the fuse-lage was covered by bulletproof steel plate and thick rubber which prevented gasoline from leaking. It was said that it was famous among the U.S. Army as a machine which was hard to burn.

The gunner could shooted from the inside of windscreen and on the rear upper part, globular gun platform with motive power was fitted. Also, in order to facilitate exchange of spare parts, if only screws of the surface of plane were taken away, the tank droped sponteneously and fresh tank could be easily putted into. Regarding the tank inside the fuselage, if the outside plate of the fuselage was removed, it could be easily taken out. Also, devices were elaborated on the tip of the fuselage the front part of the fuselage, the tailend of the fuselage and the rear part of the fuselage so that they might be exchanged easily by using special connective metal fiittings.

As for mass production, the divided construction was adopted and improvement of a field work was taken into construction. In order to save time of construction, casting parts and press parts were mainly used, by which method of lessen welding work was adopted which was epochmaking plan, but everything had not gone as expected and ended without realizing their results owing to the earthquake and air raids on the half way of preparation.

FIRING FOUIPMENT

Machine Number	No.1-3	No.4-19	No.20-450	From No. 451 onward
Front	7.7×1	13×1	13×1	13×1
Rear Upper	13×1	20×1	20×1	20×1
Side	7.7×2	7.7×2	13×2	13×2
Tail	13×1	13×1	13×1	13×2 or 13×1

7.7m/m, 13m/m and 20m/m mean flexible machine gun Type 98, Ho-163 and Ho-5 respectively.
BOMBING EQUIPMENT

Machine Number	No.1-19	No.20-750	From No. 751 onward (schedule)
22 lbs. (10kg.) Substitute Bomb Type 94	15 (15)	15	15 (15)
661bs. (30kg.) Substitute Bomb Type 1	15 (15)	15	15 (15)
Dropped Flare Bomb Type 1	15 (15)	15	15 (15)
100 lbs. (500kg.) Bomb Type 94	10 (15)	15	15 (15)
220 lbs. (100kg.) Bomb Type 94	5 (8)	8	8 (8)
550 lbs. (250kg.) Bomb Type 92	2(3)	3	3 (5)
1,100 lbs. (500kg.) Bomb Type 92	1(1)	1	1 (3)

Bracketed figures show the case of special equipment.

FOUR SIDES' DRAWING OF HIRYU (PEGGY) PLANE VIEW LOWER VIEW SIDE VIEW FRONT VIEW

SPECIFICATION

COMPLETION OF TRIAL MACHINE: December, 1942 PLACE OF PRODUCTION: Missubishi Nagoya Factory OVERALL WIDTH: 73 ft. 9 in. (22.5 m.) OVERALL LENGTH: 61 ft. 4 in. (18.7 m.) OVERALL HEIGHT: 15 ft. 9 in. (4.8 m.) WING LOAD: 42.81 lb./sq.ft. (209 kg/m z) HORSE POWER LOAD: 9.44 lbs./h.p. ASPECT RATIO: 7.7 CREW: 6-8

WING AREA: 708.5 sq.ft. (65.85m 2) EMPTY, EQUIPED WEIGHT: 30,283 lbs. (13,765 kg) EMPTY WEIGHT: 19,028 lbs. (8,649 kg.) CARRYING CAPACITY: 11,255 lbs. (5,116 kg.)

FUEL CAPACITY: 3.886 P. ENGINE: HA-40

NUMBERS OF CYLINDER: Compound Star-shaped 18 Cylinders OUTSIDE DIAMETER: 4 ft. 6 in.

WEIGHT: 2.081 lbs. (946 kg.)
DECREASING RATIO: 0.588

TAKING OFF 0 1.900 2.450
FIRST SPEED: 7,216 ft. (2.200m.)1,810 2.350
SECOND SPEED 20,008 ft. (6.100m.)1,610 2.350
PROPELLER: TDM Full Feather
NUMBERS OF PANEL: 4
DIAMETER: 11 ft. 10 in. (3.6 m.)

PITCH: 27°-90° GROUND ANGLE: 5° 41' TREAD: 19ft. 8in. (6m.)

BOMB: 1.760 lbs. (800 kg.) or torpedo of 1,760 lbs. (800 kg.)
-2.354 lbs. (1.070kg.)

ARMANENT: 20 m/m \times 1 (400 Bullets) 13 m/m \times 4 (2,100 Bullets)

MAXIMUM SPEED: 333 mi./h. (537 Km./h. at 19.975 ft. (6,090 m.)

GRUISING RANGE: 2,365 mi. (3,800 km. at 26,240 ft. (,000 m.) 248 mi./h.

CLIMBING POWER: 14 minutes 30 seconds to 19.680 ft. (6.000 m.)(400 m.)

MAXIMUM SERVING CLIMBING LIMIT: 31,060 ft. (9,470 m.) TAKE-OFF RUN: 2.309 ft. (704 m.) (Weight 30.360 lbs.)

(13.800 kg.)
LANDING DISTANCE: 1.427 ft. (435 m.) (Weight 21.010 lbs.)
(9.550 kg.)

NOTE BEFORE ASSEMBLING

- 1. Before assembling, check whether or not parts are complete as per parts list.
- Before cementing, never fail to assemble tentatively and examine movable condition and also, how nicely relative parts put together.

ARTICLES TO BE PREPARED

Knife, Pincette, Ring Rubber, Clip

As there is no cement in kit, prepare liquid cement separately.

In case of using motor, prepare 2 pcs. of Mabuchi Baby Motor and 2 pcs. of three size D flashlight batteries. Prepare lead or enamel wire (length of 1ft. 3 %in. ×4)

HOW TO PUT DECAL

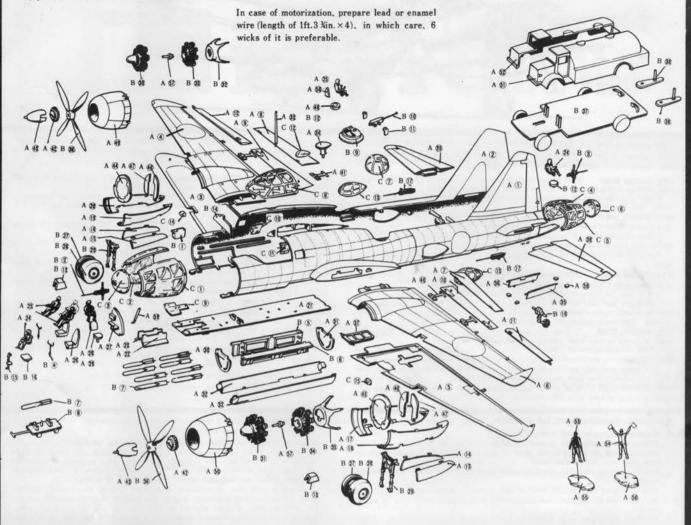
- 1. Firstly, cut away portion of decal to be applied.
- After decals are soaked in tepid water for 10-15 seconds, put them on dried cloth and then, dehydrate moisture.
- Put above decal on appointed position and paste them, sliding them lightly by tip of finger.
- 4. When finished, press out trapped air bubbles by dried cloth and then,

leave them until they dry up.

WAY AND NOTE OF PAINTING

- Use lacquer paint for plastic use or enamel paint.
 (Never use usual lacquer, as it damages styrene resin.)
- 2. It is convenient to paint small parts with their runner.
- A knack how to paint small parts nicely is to paint them atraight out by wide writing brush soaked in enough paint.
- 4. In case of making mat paint, mix paint with magnesium carbonate, tooth powder or nursery powder. According to quantity mixed, complete mat, half mat or any preferable gloss is made. As spread of mat paint is not good, before painting, make a test on useless runner.
- In case of painting wing tip light, if a little silver is mixed, it become much more realistic.
- In case that windscreen became opaque by being flawed or cemented, transparency become good, when clear lacquer is painted on it.
- In case of making mat finish of decal, paint mixed one with a little magnesium carbonate on it after decal drys up completely.

* PARTS AND CUBIC DRAWING OF HIRYU



* PARTS LIST

A PARTS (MACHINE COLOR)

1.	Fuselage (Left)1
2.	Fuselage (Right)
3.	
4.	Upper Wing (Right) ···········1
5.	Lower Wing. (Left)1
6.	Upper Wing (Left)1
7.	Upper Flap (Left)1
8.	Upper Flap (Right) 1
9.	Lower Flap (Right) 1
10.	Lower Flap (Left)1
	Aileron (Left)1
12.	Aileron (Right)1
13.	Left Leg Door (Out board)1
14.	Left Leg Door (Inboard)1
15.	Right Leg Door (Outboard)1
16.	Right Leg Door (Inboard)1
17.	Lower Nacelle for Left Engine 1
	(Inboard)1
18.	Lower Nacelle for Left Engine
	(Outboard) 1
19.	Lower Nacelle for Right Engine
	(Inboard)1
20.	Lower Nacelle for Right Engine
	(Outboard) 1
21.	Floor Plate ·····
22.	Torrible Lines Lines (Folls)
23.	Forward Floor Plate (Right)1
24.	Bomb Aimer3
25.	Pilot 3
26.	
27.	Bulkhead 1
28.	Communication Operator's Back Pad1
29.	Communication Operator's Seat1

30	Front Plate of Bomb Bay Door ······1
	Rear Plate of Bomb Bay Door 1
	Bomb Bay Door (one of each,
JZ. 1	Left & Right)2
22	Antenna 1
	Cover of Radar1
	Tail Wheel Door (Left)1
	Tail Wheel Door (Right)1 Elevator Door
	Horizontal Tail Plane (Left)1
	Horizontal Tail Plane (Right)1
	Flap Control Stick (Left)1
	Flap Control Stick (Right)1
	Cooling Fan2
	Spinner 2
	Fire Wall (Right)1
	Fire Wall (Left)1
0.0000	
	Leg Door Fitting Plate (Inboard) 2
	Leg Door Fitting Plate (Outboard) 2
	Rear Upper Seat ····· 1
	Cowling
	Batteries Container Car (Left) 1
	Batteries Container Car (Right)1
	Rigger 1
	Stand for Commander · · · · · 1
	Stand for Rigger1
	Propeller Axle 2
	Back Pad for rear upper seat1
	Holder for Tail Wheel Door 4
60.	Pitot Tube1

B PARTS (BLACK COLOR)

1. Bomb Bay of Front Machine Gun1	
2. Front Machine Gun ·······	
3. Reer Machine Gun 1	
4. Control Colum2	
5. Bomb Bay Frame (Right)1	
6. Bomb Bay Frame (Left)	
7. Bomb 220 lbs. (100 kg.)	
8. Bomb Carriage1	
9. Rear Upper Machine Gun Platform 1	
10. Rear Upper Machine Gun 1	
11. Rear Upper Machine Gun Mount 2	
12. Rear Seat Cushion ······ 1	
13. Choke 2	
14. Instrument Panel 1	
15. Bomb Sight Spectacles 1	
16. Front Seat Cushion1	
17. Side Machine Gun2	
18. Tail Wheel 1	
27. Wheel 2	
28. Wheel 2	
29. Leg Support2	
30. Right Forward Engine2	
31. Left Forward Engine 1	
32. Right Engine Accessories 1	
33. Right Aft Engine1	
34. Left Aft Engine 1	
35. Left Engine Accessories1	
36. Propeller 2	
37. Batteries Container Car Platform1	

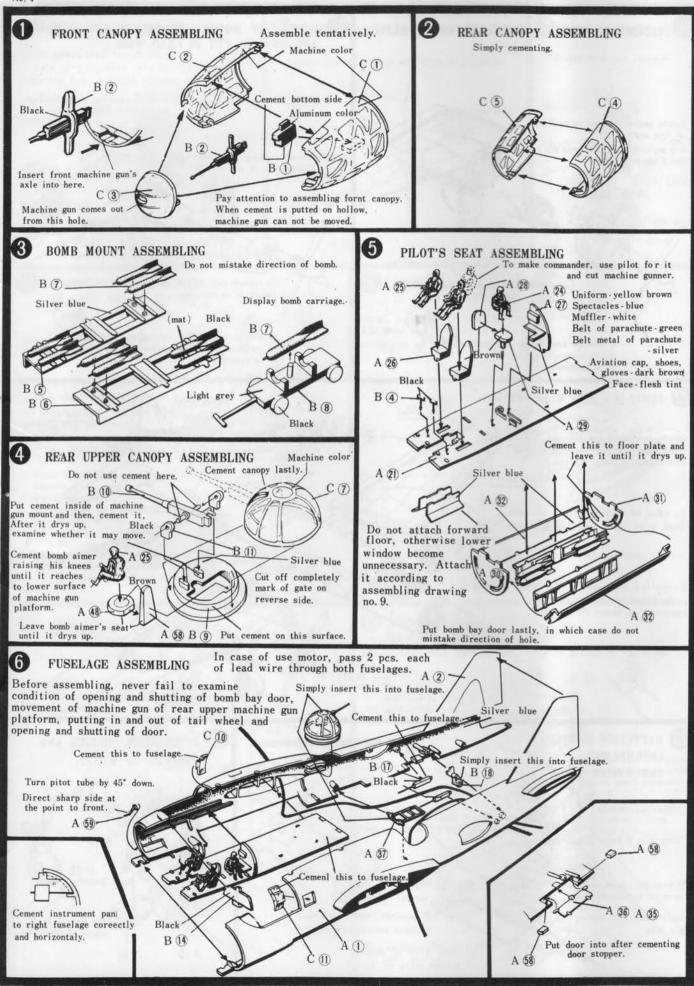
38. Batteries Container Car's Handle -----2

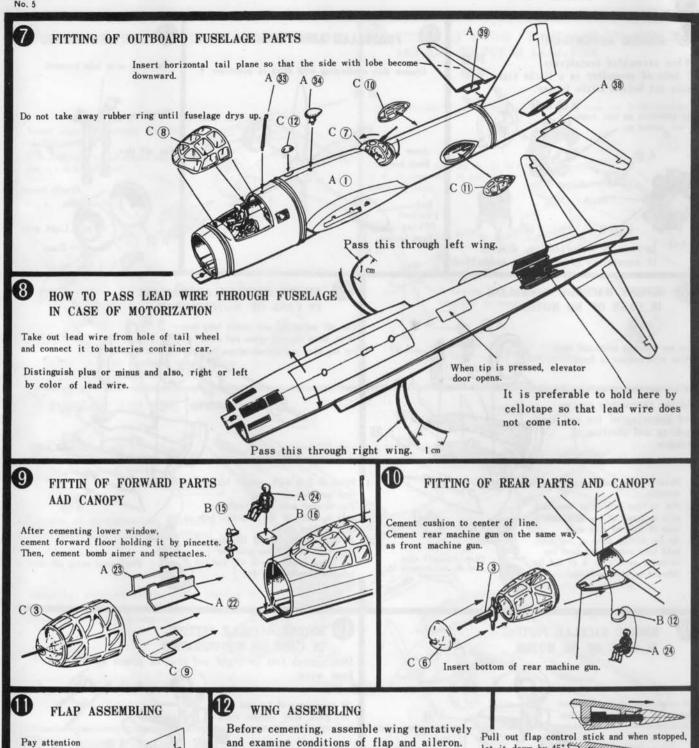
C PARTS (TRANSPARENT COLOR)

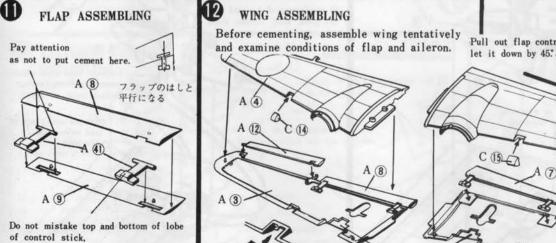
1.	Front Windscreen (Left)1
2.	Front Windscreen (Right) 1
3.	Front Machine Gun Cover 1
4.	Rear Windscreen (Right) 1
5.	Rear Windscreen (Left) 1
6.	Rear Machine Gun Cover ···· 1
7.	Cover of Rear Upper Machine Gun 1
8.	Canopy1
9.	Lower Window1
10.	Side WinJow (Right)1
11.	Side Window (Left)1
12.	Observation Window Cover1
13.	Side Machine Gun Cover 2
14.	Landing Light (Right)1
15.	Landing Light (Left)1

ACCESSORIES

1.	Decal
2.	Painting Instruction
3.	Inside Construction Drawing





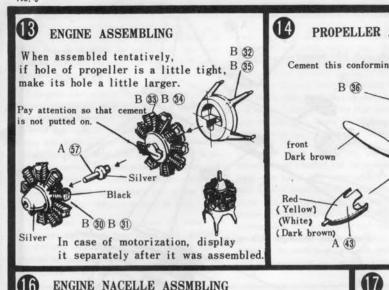


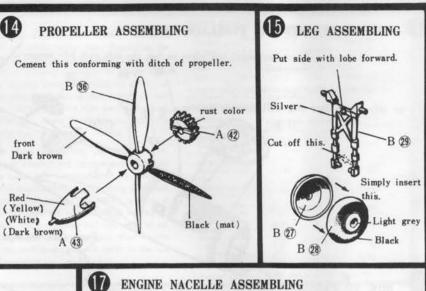
Shave here until it

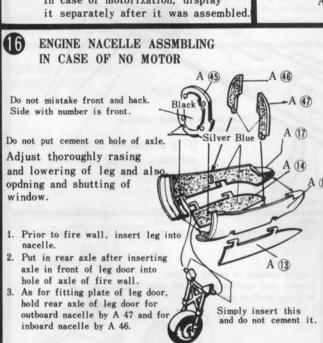
fits to hole of wing.

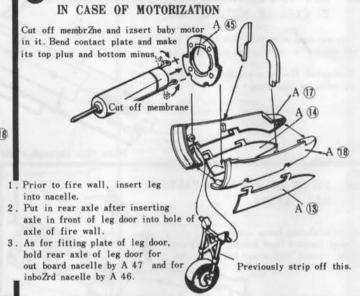
In case of motorization,

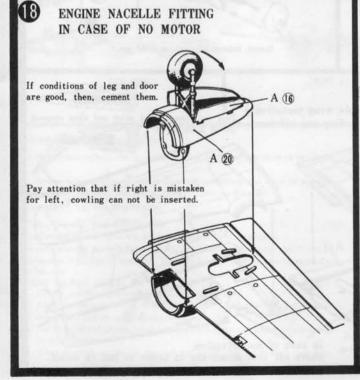
shave off this membrane in order to put in motor.

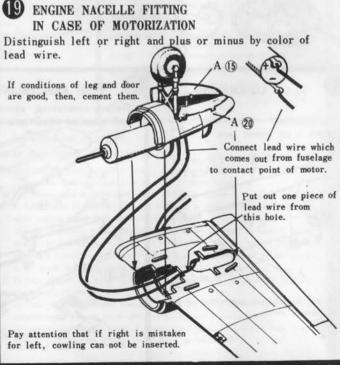


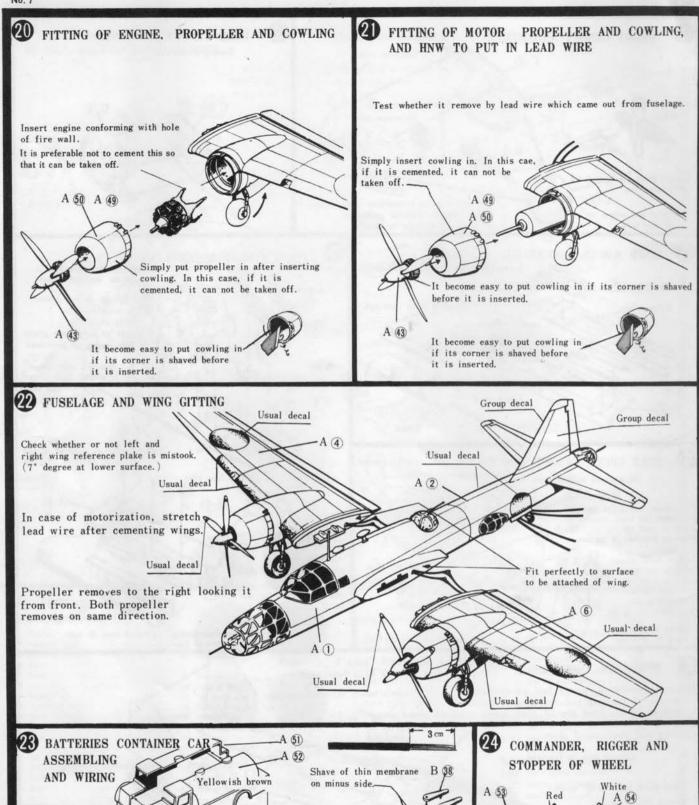


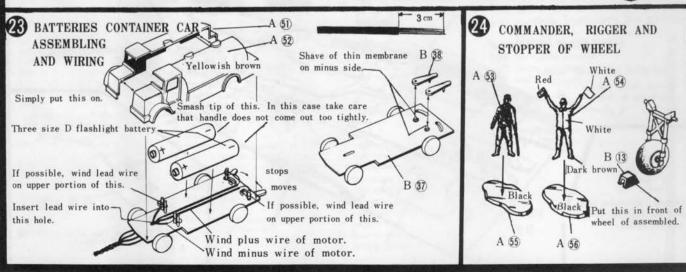


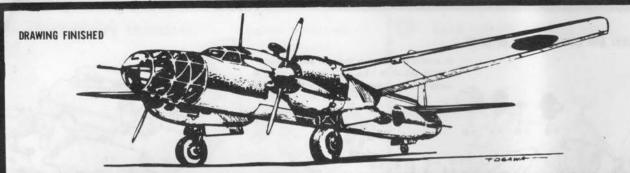












EXPLANATION OF GROUP MARK Color classification of Military Aviation Company had been unified till 1941 or thereabout, but since then, they were divided in their own company. Followings are for your reference, in case of making individual company's Peggy by changing color of decal or of making other company's Peggy than decal herein enclosed.

14TH AVIATION SROUP This group was organized in August, 1938 and Peggy was used in Japan proper from May, 1945 to the end of War.

Color classification of company was that the first, second and third were white, red and yellow respectively.

SOTH AVIATION GROUP This group was organized in August, 1938 and Peggy was used in Japan proper from 1944 to the end of War. Color classification of company was that the first, second and third were

white, red and yellow respectively. Color of machine was all dark grey and to sun dist, no white edge was at-

tached. RIST AVIATION GROUP

This group was organized in 1938 and Peggy was used in Malaya and Formosa from May, 1945 to the end of War. There was no classification for each company.

The upper and side surface of machine were muddy light Indianink color and the lower surface was dark grey. To sun dist, no white edge was attached tached. The mark was made design of No. 61.

This group was organized in 1938 and Peggy was 62ND AVIATION GROUP used in Japan proper from January, 1945 to the end of War.

classification of companies was that the first, second, third and

fourth companies were reddish brown, cobaltic, yellow and green respectively.

The upper and side surface of machine were dark grey or dark green and the lower surface was light greyish green. To sun dist, no white edge was attached. 74TH AVIATION GROUP This group was organized in July, 1941 and Peggy was used in Japan proper from May, 1945 to the end of War.

98TH AVIATION GROUP This group was organized in 1938 and Peggy was used in Japan proper and Korea from june, 1944 to the end of War.

Both colors of mark and figure of companies were white for all companies

and the first, second and third companies were no. 100-300 line, no. 400-600 and no. 700-900 line respectively.

The upper and side surface of machine were India ink color and the lower surface was dark grey. To sun dist, no white edge was attached.

110TH AVIATION GROUP This group was organized in 1944 and Peggy was used

in Japan proper from December, 1944 to the end of War.

Color classification of companies was that the first, second and third were white, green and yellow respectively.

The upper and side surface of machine were dark green or greyish green and the lower surface was white. To sun dist, no white edge was attached.

The mark was made design of No. 110.

HAMAMATSU FLYING SCHOOL This school was opened in May, 1938. There were 3 colors of mark, such as white, red and yellow.

The upper and side surface of machine were dark green and the lower surface was greyish white. To sun dist, no white edge was attached.

The mark was made design of HAMAHI (Abbreviation of Hamamatsu

The mark was made design of HAMAHI Flying Scool in Japanese.)

SPECIAL EQUIPMENT OF PEGGY Peggy with hi-speed and excellent moving performance was used with various special equipment.

1. Machine equipped with radar TAKI-1-II Above was equipped to torpedo bomber in order to facilitate searching operation and returning to the base. It was completed in August, 1944 and took part in actual battles.

2. Machine equipped with electric wave altimate (for ultra low altitude flying) TAKI-13

This was used for torpedo bomber and in case of night attack, height from the sea could be correctly measured which of cource, took part in actual battles.

3. Machine equipped with bombing sight Model 10 Over the objective sky, flying by pilot stopped for a time and if only bombing sight was set at objective point, the machine was automatically induced.

Although it was completed in May, 1944, it did not took part in actual 4. Machine equipped with tow of sail-plane battles. This was completed in November, 1943 by improving trial machine no.13 and although test was made by pulling actually transporting sail-plane K-7-2 at Fussa Airdrome, it did not adopt for actual use.

5. Machine equipped with Sakura Bomb

This was a machine which mounted Sakura Bomb at the back of pilot's seat,

of which information was received from German and produced in Japan and in February, 1945, 2 trial machines were completed, of which forward fuselage and tail plane were made by wood and also, armament was taken off. After that, as 16 movable machines in one formation, it was scheduled that they would make special attack against B-29 at Saipan.

It was a plan that at midnight on 16th of August they were expected to fly off Hamamatsu Airdrome and to reach there at least in 6 machines. But unfortunately, it came the end of War and they did not do so actually. For your information, Sakura Bomb was a bomb of 6,880 lbs. (2,900 kg.) which could concentrate its carolic force forward and aslo, fire the front plane in the distance of 3,280 ft. (1,000 m.) Its more detailed information s unknow, as at the time of the end of War, Military burnt it.

Mother Machine I-Go Model 1A This pilotless machine controlled by wireless induction mounted bomb of 1,760 lbs. (800 kg.). This was hanged under fuselage and attacked enemy by discharging it from long distance. But it was ended only in test and did not use actually.

Ki-67 Torpedo Bomber Yasukuni



Ki-109 Experimental Intercepter Fighter



Nakajima Ki-43-1 Osca Model 1

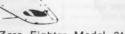


Nakajima Ki-43-II Osca Model II



Aichi D4Y2 Judy



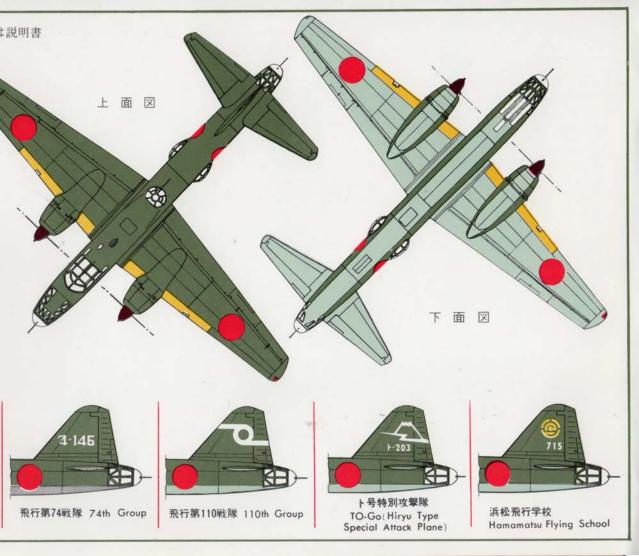




Nakajima A6M2-N Mitsubishi A6M2 Zero Fighter Model 21 Mitsubishi A6M5 Rufe Zero Fighter Model 52

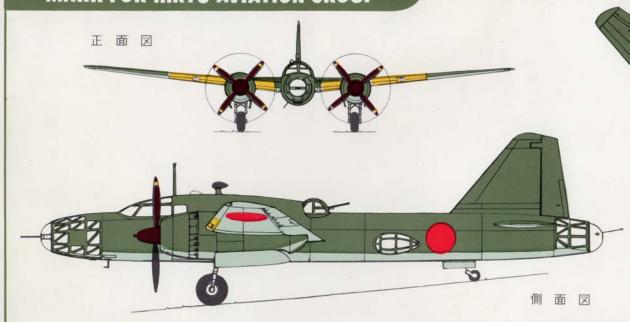


KI-67 SERIES INSIDE CONSTRUCTION (Top: Yasukuni. Middle: Hiryu. Bottom(KI-109)



飛竜戦隊マーク MARK FOR HIRYU AVIATION GROUP

※塗装、戦隊マークについては にくわしく書いてあります





飛行第14戦隊 14th Group



飛行第60戦隊 60th Group



飛行第61戦隊 61st Group



飛行第62戦隊 62nd Group