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Japanese



Japanese Aircraft Designations 1939-1945

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Like the U.S., Japan's Army and Navy each had their own systems of aircraft designation, in some cases as many as four or five systems! Because of this confusion, the Allied forces started assigning code names to each Japanese type, and it is these code names that are most often remembered now.

We will begin by looking at the Imperial Japanese Navy's (IJN) designation systems, as our (Confederate Air Force) Zero and Tora aircraft are all IJN aircraft or replicas.

Japanese Navy Aircraft Designations

At the beginning of World War II, the Japanese Navy Air Force (JNAF) used three different systems to designate their aircraft: one, the *Shi* number; two, a type number system and three, a type/model/manufacturer code (called the short designation). Later during the war, two new systems were added, popular names and the Service Airplane Development Program (SADP) system.

Experimental Shi Numbers

Every new design, real or projected, from 1931 onward received an experimental or Shi number derived from the current year of the Japanese imperial reign, which for emperor Hirohito began in 1926 and was called Showa. Added to the Shi number was the purpose of the new design, (i.e. carrier fighter, carrier bomber, etc.) to differentiate between different designs. Thus, the Zero was designed to meet a 1937 specification called the 12-shi carrier fighter, that year being the twelfth year of *Showa*.

Type and Model Number System

Each type of aircraft entering production for the JNAF after 1920 was given a type number combined with a brief description of its primary function. Initially related to Showa dates, in 1929 the type number became the last two digits of the year in the Japanese calendar year. Thus the Aichi dive-bomber which entered production in 1939 (2599 in the Japanese system) was the Type 99 Carrier Bomber. Only a single digit was used when the year ended in 00, as with the Type 0 Carrier Fighter (thus the name "Zero") which entered production in 1940 or the Japanese year 2600.

Subtypes and new versions of a type were indicated by model numbers added after the type. By the late 1930s, model numbers had evolved to two digits beginning with 11 for the first version, indicating the first airframe version and the first powerplant configuration. Thus the Type 0 Carrier Fighter Model 11 was the original production Zero, while the Model 21 was the next production version, with the addition of folding wing tips (thus the "2" for airframe modification in 21). The Type 0 Carrier Fighter Model 52 was the Zero after 5 major airframe and 2 engine configurations.

Further modifications to model numbers were indicated by the Japanese characters *Ko*, *Otsu*, *Hei*, etc. which are normally displayed as lower case Roman letters "a", "b", "c", etc. (i.e. Navy Type 0 Carrier Fighter Model 52c).

Short Designation by Type and Manufacturer

In the late 1920s, the IJN designed an aircraft designation system remarkably similar to that used by the U.S. Navy from 1922 until 1962. Each new design was given a "short designation" consisting of a group of Roman letters and numbers. The first letter (sometimes two) indicated the basic type or purpose of the aircraft, as indicated in the following table:

Basic Type Letters	
Letter(s)	Basic Type
A	Carrier Fighter
B	Carrier Attack Bomber (i.e. Torpedo or Level Bomber)
C	Reconnaissance
D	Carrier Bomber (i.e. Dive Bomber)
E	Reconnaissance Seaplane
F	Observation Seaplane
G	Attack Bomber
H	Flying Boat
J	Land-based Fighter
K	Trainer
L	Transport
M	Special Floatplane
MX	Special Purpose Aircraft
N	Fighter Seaplane
P	Bomber
Q	Patrol Plane
R	Land-based Reconnaissance
S	Night Fighter

Following the type came a series number indicating the number of major sub-types produced by

that manufacturer. Unlike USN practice, the digit "1" was not ignored in this system and was included. Thus the designation G4M designated the fourth attack bomber (G4) designed or produced by Mitsubishi (M, see below).

The second letter was, as indicated above, the manufacturer's code, and included some non-Japanese companies, as shown in the table below:

Manufacturer's Codes	
Letter(s)	Manufacturer
A	Aichi (Aichi Tokei Denki and Aichi Kokuki)
	North American Aviation (US)
B	Boeing Aircraft (US)
C	Consolidated Aircraft (US)
D	Douglas Aircraft (US)
G	Hitachi Kokuki
	Grumman Aircraft Engineering (US)
H	Hiro (Dai-Juichi Kaigun Koskusho)
	Hawker Aircraft (UK)
He	Ernst Heinkel Flugzeugwerke (GER)
J	Nihon Kogata Hikoki
	Junkers Flugzeug und Motorenwerke (GER)
K	Kawanishi Kokuki
	Kinner Airplane & Motor (US)
M	Mitsubishi Jukogyo
N	Nakajima Hikoki
P	Nihon Hikoki
S	Sasebo (Dai-Nijuichi Kaigun Kokusho)
Si	Showa Hikoki
V	Vought-Sikorsky (US)
W	Watanabe Tekkosho
	Kyushu Hikoki
Y	Yokosuka (Dai-Ichi Kaigun Koku Gijitsusho)
Z	Mizuno Guraida Seisakusho

The first two letters and the series number remained the same for the service life of each design, however, minor to moderate changes in the design (usually reflected in a new Type Model number) were indicated by adding a second subtype number after the manufacturer's letter. Further minor changes were indicated by adding letters after the subtype number as in the Type/Model scheme above.

In a few cases, when the designed role of an aircraft changed, the new use was indicated by adding a dash and a second type letter to the end of the existing short designation. Thus the H6K4 was the sixth flying boat (H6) designed by Kawanishi (K), fourth version of that design (4). When the plane was equipped primarily as a troop or supply transport, its designation was then H6K4-L.

Popular Names

In July 1943, official names were given to JNAF aircraft in place of type numbers. These names were chosen based on the aircraft's primary role as listed below:

Popular Names	
Fighters	Meteorological phenomena
Carrier Fighters	Wind names ending in <i>pu</i> or <i>fu</i>
Seaplane Fighters	same as Carrier Fighters
Interceptor Fighters	Lightning names ending in <i>den</i>
Night Fighters	Light names ending in <i>ko</i>
Attack planes	Mountain names
Bombers	Star (<i>sei</i>) or constellation (<i>zan</i>) names
Patrol planes	Sea or ocean names
Reconnaissance planes	Cloud names
Trainers	Tree, plant or flower names
Transports	Sky names
Miscellaneous	Named for landscape effects

These popular names were most used on designs which came into service later in the war, such as the Mitsubishi J2M *Raiden* (Thunderbolt) and Kawanishi N1K *Shiden* (Violet Lightning), both interceptors.

SADP Systems

The Service Airplane Development Program was begun in 1939 as a research program by the IJN's Bureau of Aeronautics. Each design studied was to be coded with its manufacturer's letter under the existing short designation system, plus a two digit number (i.e. 10, 20, 30, etc.). However this system was not widespread, and few records of SADP designations survived the war.

Japanese Army Aircraft Designations

The Japanese Army Air Force used two aircraft designation systems, the type number system and the Kitai number system. In addition, some types had a popular name.

Type Numbers

From 1927, new Army aircraft were given a type number based on the last digits of the Japanese

year that the type was accepted into service. Up to the year 2599 (1939 in the West) the last two digits formed the type number. In 2600 (1940) the number 100 was used, and from 2601 (1941) only the last digit of the year was used.

Thus, the Army Type 97 Heavy Bomber and Army Type 97 Fighter were both accepted in 2597 (1937) and can be differentiated by the functional description attached to each.

New versions of an existing type were indicated by adding a Model number and letter, i.e. Army Type 3 Fighter Model 2A.

Kitai Numbers

The type number system required rather lengthy descriptive function names to fully identify an aircraft. The *Kitai* or Ki number system began in 1932 and assigned a number to each aircraft planned or projected to be built. Some existing aircraft also were given Ki numbers. At first the numbers were assigned sequentially but in 1944, new Ki numbers were scrambled, as if Allied intelligence wasn't confused enough!

New versions of an existing design had Roman numbers (I, II, III, etc.) added to the Ki number and subvariants had lower case letters (a, b, c, etc.) as used in some navy systems. And sometimes, the model and variant numbers and letters were supplanted by a Kaizo (KAI) or modification code! Let's look at the Kawasaki *Hien*, with a Kitai number of 61 and Allied code name TONY, as an example.

The project and prototypes were called Ki-61. The first two production versions were Ki-61-Ia and Ki-61-Ib. The next two versions carried KAI modification codes as Ki-61-I KAId and KAId. Finally, the prototype of a second model was Ki-61-II and the first production of this new model was Ki-61-II KAId. Whew!

Just to tie things up, the last example, the Ki-61-II KAId was called the Army Type 3 Fighter Model 2A in the type number system. And a few foreign designed or built aircraft entered Japanese service, and these were given an alphabetical type rather than a numeric one, based on either the country of origin (Type I Heavy Bomber, for the Italian Fiat B.R. 20) or the manufacturer's name (Type LO Transport for the U.S. Lockheed Model 14).

Popular Names

Even the Japanese Army had problems using their lengthy aircraft designations in combat, and assigned popular names to many of the major combat types in service. Unlike the navy, however, the army chose names without any clear pattern.

Thus the Ki-61 fighter was *Hien* (Swallow), the Ki-43 fighter was *Hayabusa* (Peregrine Falcon) and the Ki-67 bomber was *Hiryu* (Flying Dragon).

The Allies Answer to Japanese Aircraft Designations

As you can imagine from the above discussion, even when one knows that the full designation of an aircraft is Aichi D3A1 Navy Type 99 Carrier Bomber Model 11, you might wish to have a short, simple and unmistakable name, especially when you are in combat with it!

In the second half of 1942, a colorful set of code names was developed in the Southwest Pacific

Theater by the Air Technical Intelligence Unit (ATI) of the Allied Air Forces in Australia. The head of the unit, Captain Frank T. McCoy Jr. was from Nashville, Tennessee, and the first few code names were hillbilly names such as ZEKE, NATE, PETE, JAKE and RUFE, as they were simple, short and distinctive. The basic system spread rapidly, and by late 1942, was adopted for use by both the USAAF and USN. In general, the code names were assigned using the following system, although several exceptions exist:

Basis of the Allied Code Names Scheme

Code Name Type	Assigned to Aircraft Type
Male names	Fighters (both Army and Navy, single or multi-engined) and Reconnaissance seaplanes
Female names	Bombers (including attack and dive-bombers), Reconnaissance planes (land or carrier-based), Flying boats and Transports (transport names began with "T")
Tree names	Training aircraft
Bird names	Gliders

Thus, the example Aichi given above, became simply VAL in the Pacific code name system. As we learned more about the various models of each type, the Japanese model number was often attached to the code name, as in ZEKE 32 for the A6M3 Type 0 Carrier Fighter Model 32 "Zero".

Obviously, these code names were much easier to remember and say for Allied airmen and thus, even today, discussions of the Pacific war are filled with names such as BETTY, PETE, OSCAR, KATE and TONY.

List of Japanese Army and Navy Aircraft and their Code Names

Aircraft marked with a single asterisk(*) were fictional, and did not exist. Those with a double asterisk(**) were identified as more than one type, i.e. they are duplicated in the list. This list is extracted and edited from Mikesh's *Japanese Aircraft Code Names & Designations*.

Japanese Army & Navy Aircraft and their Code Names

Service	Type Number Desig.	Manuf. & Model	Code Name
Navy	Type 90 Operations Trainer	Mitsubishi K3M1	PINE
Navy	Type 90-2 Flying-Boat	Kawanishi H3K1	BELLE
Army	Type 93-2 Twin-engine Light Bomber	Mitsubishi Ki-2-II	LOUISE
Navy	Type 93 Intermediate Trainer	Kugisho K5Y	WILLOW
Navy	Type 94 Reconnaissance Seaplane	Kawanishi E7K	ALF
Army	Type 95-1 Intermediate Trainer	Tachikawa Ki-9	SPRUCE
Army	Type 95-3 Primary Trainer	Tachikawa Ki-17	CEDAR
Army	Type 95 Fighter	Kawasaki Ki-10	PERRY
Navy	Type 95 Reconnaissance Seaplane	Nakajima E8N1	DAVE
Navy	Type 96 Carrier Fighter	Mitsubishi A5M	CLAUDE

Navy	Type 96 Carrier Fighter **	Mitsubishi (See CLAUDE)	SANDY
Navy	Type 96 Carrier Attack Bomber	Kugisho B4Y1	JEAN
Navy	Type 96 Carrier Bomber	Aichi D1A2	SUSIE
Navy	Type 96 Reconnaissance Seaplane	Aichi E10A1	HANK
Navy	Type 96 Attack Bomber	Mitsubishi G3M	NELL
Navy	Type 96 Transport	Kugisho L3Y	TINA
Navy	Type 96 Reconnaissance Seaplane	Watanabe E9W	SLIM
Army	Type 97 Command Reconnaissance Plane	Mitsubishi Ki-15	BABS
Army	Type 97 Heavy Bomber	Mitsubishi Ki-21	SALLY
Army	Type 97 Heavy Bomber **	Mitsubishi (See SALLY)	JANE
Army	Type 97 Fighter	Nakajima Ki-27	NATE
Army	Type 97 Fighter **	Nakajima (See NATE)	CLINT
Army	Type 97 Fighter *	Mitsubishi	ABDUL
Army	Type 97 Medium Bomber *	Kawasaki	JULIA
Army	Type 97 Light Bomber	Mitsubishi Ki-30	ANN
Army	Type 97 Transport	Nakajima Ki-34	THORA
	Type 97 Light Bomber *	Mitsubishi	NORMA
Navy	Type 97-1 and 97-3 Carrier Attack Bomber	Nakajima B5N1 & 2	KATE
Navy	Type 97-2 Carrier Attack Bomber	Mitsubishi B5M1	MABEL
Navy	Type 97 Flying Boat	Kawanishi H6K	MAVIS
Navy	Type 97 Transport	Nakajima L1N1	THORA
Navy	Type 97 Seaplane Fighter *	Nakajima	ADAM
Navy	Type 97 Reconnaissance Seaplane *	Aichi	BOB
Army	Type 98 Light Bomber	Kawasaki Ki-32	MARY
Army	Type 98 Direct Co-operation Plane	Tachikawa Ki-36	IDA
	Type 98 Medium Bomber *	Heinkel He 111	BESS
	Type 98 Showa Light Bomber *	Vultee V-11GB	MILLIE
Navy	Type 98 Reconnaissance Plane	Mitsubishi C5M	BABS
Navy	Type 98 Reconnaissance Seaplane	Aichi E11A1	LAURA
Navy	Type 98 Bomber Float Plane *	Aichi	IONE
Army	Type 99 Twin-engine Light Bomber	Kawasaki Ki-48	LILY
Army	Type 99 Assault Plane/Tactical Recon.	Mitsubishi Ki-51	SONIA
Army	Type 99 Advanced Trainer	Tachikawa Ki-55	IDA
Navy	Type 99 Carrier Bomber	Aichi D3A	VAL

Navy	Type 99 S.E. Dive Bomber Seaplane **	Aichi (See JAKE)	JUNE
Navy	Type 99 Flying-Boat	Kugisho H5Y	CHERRY
Navy	Type 99 Four-engine Flying Boat *		JOAN
Army	Type 100 Command Reconnaissance Plane	Mitsubishi Ki-46	DINAH
Army	Type 100 Tactical Pilot Trainer	Mitsubishi Ki-46-II KAI	DINAH
Army	Type 100 Interceptor Fighter	Mitsubishi Ki-46-III KAI	DINAH
Army	Type 100 Heavy Bomber Donryu	Nakajima Ki-49	HELEN
Army	Type 100 Transport	Mitsubishi Ki-57	TOPSY
Army	Type 0 Medium Bomber **	Mitsubishi (See SALLY)	GWEN
Army	Type 0 Single-seat Twin-engine Fighter *	Mitsubishi	HARRY
Navy	Type 0 Carrier Fighter	Mitsubishi A6M	ZEKE
Navy	Type 0 Reconnaissance Seaplane	Aichi E13A1	JAKE
Navy	Type 0 Small Reconnaissance Seaplane	Kugisho E14Y1	GLEN
Navy	Type 0 Observation Seaplane	Mitsubishi F1M1	PETE
Navy	Type 0 Transport	Douglas DC-3 L2D2/5	TABBY
Navy	Type 0 Transport	Mitsubishi L4M1	TOPSY
Army	Type 1 Fighter Hayabusa	Nakajima Ki-43	OSCAR
Army	Type 1 Single-seat Fighter **	Kawasaki (See OSCAR)	JIM
Army	Type 1 Advanced Trainer	Tachikawa Ki-54a	HICKORY
Army	Type 1 Operations Trainer	Tachikawa Ki-54b	HICKORY
Army	Type 1 Transport	Tachikawa Ki-54c	HICKORY
Army	Type 1 Freight Transport	Kawasaki Ki-56	THALIA
Army	Type 1 Transport	Kokusai Ki-59	THERESA
Army	Type 1 Light Bomber *	Nakajima (See EVE)	JOYCE
Navy	Type 1 Attack Bomber	Mitsubishi G4M1/G4M6	BETTY
Navy	Type 1 Formation Escort Fighter	Mitsubishi G6M1	BETTY
Navy	Type 1 Attack Bomber Trainer	Mitsubishi G6M1-K	BETTY
Navy	Type 1 Transport	Mitsubishi G6M1-L2	BETTY
Navy	Type 1 Target Plane	Kugisho MXY4	
Navy	Type 1 Dive Bomber *	Nakajima (See JUDY)	DOT
Navy	Type 1 Single-seat Fighter **	Mitsubishi (See ZEKE)	RAY
Army	Type 2 Single-seat Fighter Shoki	Nakajima Ki-44	TOJO
Army	Type 2 Two-seat Fighter Toryu	Kawasaki Ki-45 KAI	NICK
Army	Type 2 Advanced Trainer	Manshu Ki-79	

Navy	Type 2 Training Fighter	Mitsubishi A5M4-K	
Navy	Type 2 Fighter Seaplane	Nakajima A6M2-N	RUFE
Navy	Type 2 Carrier Reconnaissance Plane	Kugisho D4Y1-C	JUDY
Navy	Type 2 High-speed Recon. Seaplane Shiun	Kawanishi E15K1	NORM
Navy	Type 2 Flying-Boat	Kawanishi H8K	EMILY
Navy	Type 2 Training Flying-Boat	Aichi H9A1	
Navy	Type 2 Land Based Reconnaissance Plane	Nakajima J1N1-C	IRVING
Navy	Type 2 Gekko (Night Fighter)	Nakajima J1N1-S	IRVING
Navy	Type 2 Primary Trainer Momiji	Kyushu K9W1	CYPRESS
Navy	Type 2 Intermediate Trainer	Kyushu K10W1	OAK
Army	Type 3 Fighter Hien	Kawasaki Ki-61	TONY
Army	Type 3 Command Liaison Plane	Kokusai Ki-76	STELLA
Army	Type 4 Heavy Bomber Hiryu	Mitsubishi Ki-67	PEGGY
Army	Type 4 Special Attack Plane	Mitsubishi Ki-67-I KA1	PEGGY
Army	Type 4 Fighter Hayate	Nakajima Ki-84	FRANK
Army	Type 4 Primary Trainer	Kokusai Ki-86	CYPRESS
Army	Type 4 Assault Plane (See note)	Kawasaki Ki-102b	RANDY
Army	Type 4 Special Transport Glider	Kokusai Ku-8	GANDER
Army	Type 4 Special Transport Glider**	Kokusai Ku-8 (GANDER)	GOOSE
Army	Type 5 Fighter	Kawasaki Ki-100	
Navy	Type D Transport	Douglas DC-3	TABBY
Navy	Type He Interceptor Fighter	Heinkel A7He1 (He 112B-0)	JERRY
Army	Type LO Transport	Lockheed 14	THELMA
Army	Type I Heavy Bomber	Fiat B.R.20	RUTH
Navy	Type S Two-seat Fighter	Seversky A8V1	DICK

Sources and Further Reading

An excellent single source on Japanese Army and Navy aircraft is Rene J. Francillon's *Japanese Aircraft of the Pacific War*, published by Putnam and others.

Another specific reference is *Japanese Aircraft Code Names & Designations* by Robert C. Mikesh, published by Schiffer. This book has some interesting history behind the development of the Allied code names, as well as a short discussion of each aircraft, including some rather minor types.

For a humorous and unfortunately typical American view of Japanese military and naval air power in early 1941, check out the article [Japan Is NOT an Air Power](#).

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