

Japanese Military Timepieces of WWII

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(translation by Donall O'Ceallaigh)

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Introduction

This is a difficult topic for a European collector. Historical artifacts and collector's pieces relating to Japanese military timepieces of this era are not easily found in Europe. The language barrier and cultural background, which is so different from European culture, also present obstacles. The author would like to thank those who made possible the completion of this difficult task. Don Wright of Tulsa, Oklahoma, played a crucial role, making his collection available to be photographed by the author. Some of the pictures used were by Kesaharu Imai, and were taken from WPP (World Photo Press) publications. And some of the photos used were by Steffen Röhner.

The author discovered several photos depicting kamikaze pilots wearing watches and clocks hung around their necks at a special exhibition by the Royal Navy at its Fleet Air Arm Museum in Yeovilton, Somerset, England. Tadaashi Noda, of WPP, helped in identifying and deciphering the markings. Unfortunately, it was not possible to explain how the Japanese Army and Navy acquired and distributed these timepieces, as Japanese air power was just a component of the Army and Navy. It was also not possible to properly outline the origins of the watches in this article. For example, it is difficult to know to what degree

they were copied from Swiss models. It is a fact that from the 1920s on, Japan worked to develop navigational timepieces. However, all prototypes were destroyed by fire during the development stage of these timepieces. As a result of this catastrophe, the model built along the lines of Ulysse Nardin's chronometer became the most important and predominant type used by the Japanese.

It has long been recognized that timekeeping plays an important role in both military and civilian life. Countries such as England, America, Germany, and Japan had their own military timepieces, which were comparatively similar in design. Because, as stated above, Japanese military timepieces are seldom found in European collections, this report can in no way be seen as authoritative. There have also been only a few published reports on Japanese military clocks up until now. The Society of Military Horologists, NAWCC Chapter 143, has so far published two of these: "Japanese Aviation Timepieces," by Gary D. Nila, published in 1993, and a photographic

piece, "A Collection of WWII Japanese Military Timepieces," by John Mitchell (England), published in 1998. For the most part these articles showed variants of the watches dealt with in this article.

Manufacturers

Almost every Japanese military timepiece seen to date has carried the mark of watch manufacturers "Seikosha" or "K. Hattori," the forerunners of the modern-day Seiko Co. Ltd., Ginza Tokyo, Japan. The mark of another producer, Aiti Tokei Denki KK, appeared on a ship's clock and also on a timed detonator. Swiss and German products, in particular chronographs and wristwatches, were undoubtedly worn by Japanese flight crews as well.

Ship's Chronometers

The Seikosha chronometer shown here in Figures 1-6 is marked "V-872." It sits in a three-part wooden casing with spyglass and has the same identifying "V-872" on the movement, dial, and



Figure 1, above. Kanji character for the "Time."

Figure 2, right. Ship's chronometer Seikosha no. V-872, featuring a definet escapement, reverse fusee, and decorated plates. The three-part mahogany box has electrical contacts.



Figure 3.



Figure 5.

Figures 3 to 6. Seikosha chronometer no. V-872, here showing identification number on the movement, dial, and box. The movement seems to be identical to the Ulysse Nardin and may have been either licensed or copied. The dial marking says "Seiko" in Katakana and Kanji and "Meridian." The tag shows the inspection mark of the Navy, the anchor.



Figure 4.



Figure 6.

Figure 7, below. Ulysse Nardin movement.



case. The movement is of excellent workmanship, with a chronometer escapement and fusee. It was copied from, or licensed to be built by, Ulysse Nardin (compare Figures 5 and 7). The Kanji and Katakana characters for "Seiko, Meridian" are marked on the dial above the middle axis. The small inscription at the bottom edge of the dial face cannot as yet be deciphered. An electrical seconds contact, needed to control slave clocks as well as other signals, was conducted through an inner and outer plug located on the wooden casing.

Ship's Wall Clocks

Ship's wall clocks with one-week movements, such as various versions by Seikosha, are relatively common. Take, for example, the piece numbered 11227 (Figures 8 and 9). The inscription on the dial translates as "One-Week Movement." The casing has been numbered "A831." Astonishingly, the ship's wall clock, number 104, from Aiti Tokei Denki KK, Nagoya, Japan, only had a one-day movement (Figures 10 and 11). The inscription on the dial translates as: "One-Day Movement Mod. 1."



Figure 8.



Figure 9.

Figures 8 and 9. Ship's wall clock - Seikosha, Tokyo. The wording on the dial states, "1 week movement no. 11227." The bezel shows the marking of the Navy and the case no. "A 831." Figures 10 and 11. Ship's wall clock made by Aiti Tokai Denki KK Nagoya. The dial marking states, "No. 104. 1 day movement, mod. 1." The bezel shows the sign of "Aii" in Latin and Kanji, the Navy mark, and case no. B 238. Note that the winding arbor is counter clockwise.



Figure 10.



Figure 11.

On the casing edge is the Navy anchor and the number "B238." A small yet unusual detail is the counterclockwise winding arbor.

Specialized Timepieces

The Japanese military machine, with its many and varied functions, needed a large and varied supply of timekeepers. The more unusual timepieces included a

timed detonator setup, a dark room clock, and a surveillance control clock.

It is not clear what the Navy timed detonator number 1235 by Aiti Tokai Denki Co. Ltd. was used



Figure 12, above. Figure 13, right.



Figure 14, above. Figure 15, right.



Figure 16, above. Figure 17, right.



Figure 18, above. Figure 19, right.



Figures 12 and 13. Ship's wall clock, Seikosha, without further markings.

Figures 14 and 15. Another ship's clock by Seikosha. The dial markings translate as, "luminous, 1 day movement type 1 (mod. 1) no. 2448." This clock has a counter-clockwise wind.

Figures 16 and 17. Ship's clock by Seikosha. The dial markings state, "1 week movement type 1 mod. 2 no. 2302," and the clock has a clockwise wind.

Figures 18 and 19. Ship's clock, maker and origin not identifiable; perhaps Chinese?

for (Figures 20-23). It could possibly have been built into torpedoes. However, its 36-hour operating time meant that it was more likely to have been fitted in sea mines.

Many photo laboratories equipped with dark rooms were set up to process the large amount of photographic material gathered on targets, etc. The inscription on the case type-plate of the clock shown in Figures 24-26 translates as: "Dark room clock, number 1270." The five-pointed star identifies it as belonging to the Japanese Army.

The surveillance of military objects needed to be precisely controlled and time-checked. Control books and surveillance clocks were used for this purpose. Displayed here in Figures 27-29 is piece number 5756 from K. Hattori and Co. Ltd. Ginza, Tokyo. The dial signature consists of the letters "KH" in a rhombus. The piece is identical to the one made by Bürk of Schwenningen, used by the German Kriegsmarine. The piece's cover illustrates that many such clocks came into the hands of collectors as war booty. The following message is scratched onto the cover: "Taken from Yokusuka Naval Air Base Japan, Sept. 26, 1945, R. H. Gerber."



Figure 20.

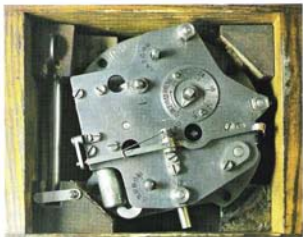


Figure 21.

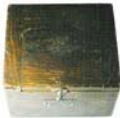


Figure 22.



Figure 23.

Figures 20 to 23. Thirty-six-hour detonator timer. "producer Aichi Tokai Denki Co., Ltd." no. 1235. Navy marking.

Figures 24 to 26. Dark room clock no. 1270, showing the marking of the Army with a five-pointed star.



Figure 24.



Figure 25.



Figure 26.

Short history of Seiko K. Hattori:

As with most present-day watch producers, watch manufacturer Seiko, did not see a decline after the end of WWII and wartime equipment supply manufacture. An overly narrow focus on Seiko's aviator watch's image was eventually to damage their reputation.

1881: Kintaro Hattori opens a clock shop in Tokyo's fabled Ginza district. This store is the direct ancestor of today's Seiko Corporation, Tokyo. Established under the name of K. Hattori & Co. Ltd., the history of Seiko begins.

1892: With ten workers in his employment, Kintaro Hattori establishes a clock factory at Ihiwara-cho, Tokyo. The first dozen clocks are produced two months later.

1913: After two decades of mastering clock technology, the company begins production on the first wristwatch made in Japan ("Lansé"). By the end of 1913, the company even opens its first overseas export office in Shanghai, China.

1924: The Seiko brand is born. Forty-three years after the company was founded, the first wristwatch under the name Seiko is made.

1937: A new watch factory is established. A year later in 1938, it produces 1,179,639 watches.

1955: Seiko, already known for its accuracy and craftsmanship, produces the first self-winding wristwatch made in Japan.

1964: The official timer of the 18th Olympic Summer Games in Tokyo, Seiko provides a total of 1,278 stopwatches as well as the world's first quartz chronometers—an important forerunner of the coming age of quartz soon to be inaugurated by Seiko. (web site of Seiko)

セイコー 精工舎 Seiko characters in Katakana and in Kanji

Figures 27 to 29. Watch control clock no. 5798 by K. Hattori & Co. Ltd. Ginza, Tokyo. The clock is identical to those made by Bürk Schwenninger and used by the German Kriegsmarine. Hand-engraved text on the inside back states: "Taken from Yokosuka Naval Air Base Japan, Sept. 26, 1945, R. H. Gerber."



Figure 27.



Figure 28, above. Figure 29, below.



Figure 30, above. The Japanese battle ship Kirishima was modernized in 1938.

Aircraft Clocks

These clocks (Figures 31-33, 35-38) were manufactured by Seikosha and feature a pre-1940 brass case and hinges. Note the post-1940 patent metal twisting bezel with red, blue, or green arrows for time-marking and the large, Arabic, radium-illuminated (radioactive) digits. The four-bolted flange allowed the clock to be fitted into aircraft instrument panels. A large brass knob (up to 1939) or plastic knob (after 1940) was pulled out to set the clock, which was approx. 7.5 cm in diameter. These clocks were fitted in the instrument panels of all Japanese

aircraft. All clocks originally had the manufacturer's type-plate. In some cases the specifications can be translated as "Type 100 Clock." Some clock plates from the Army air force show the Army star alongside various quality-control markings. It is likely that examples also exist that bear the Navy anchor. The "Type 0" marking probably indicates the Navy. This clock was sometimes called the "Zero Clock," after Mitsubishi's "Zero" fighter aircraft. Clocks with brass casings date from 1936 at the earliest and from 1939 at the latest. They are heavier and have a dark, golden yellow sheen. They were coated

with a black paint that easily scrapes off. The winding knob, as well as the type-plate, are also brass. All the early versions have the Army stamp. Post-1940 clocks have aluminum casings with a plastic winding knob and an aluminum type-plate. They were varnished with a matte black paint. Under the paint the housing has a matte gray metal surface. A length of parachute silk was often threaded through the fastening holes. The pilot would have worn the clock around his neck, which allowed him to easily read the time. Figures 34 and 39 show Navy air force kamikaze pilots before



Figure 31.



Figure 32.



Figure 33.



Figures 31 and 32. A Seikosha aircraft clock with a small second hand at "12," and a turnable bezel with red marks for elapsed time. The dial is marked with the character for "time." The aluminum case indicates a late production date.

Figure 33. Same type clock with a pre-war case of brass. (mal)

Figure 34, left. Navy air corps with aircraft clocks and, on the right, a pocket watch with necklace.

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Figures 35 to 38, clockwise from top. Seikoshia aircraft clock with central seconds, turnable bezel, and two colored elapsed time indicator marks. The dial is signed with "TOKI" (time), the case is of light metal, and the tag markings translate as "type 100 aviation clock no. 2481."



Figure 39. Japanese Army Air Corps. The Samurai sword identifies these pilots as officers; the white flag identifies them as suicide airmen. The pilot at top left wears an aircraft panel clock with the knob at "12"; the clocks worn by the others show the knob at "6."

embarking on their last mission. They are wearing clocks around their necks. Some of the winders are pointing upwards, some downwards. To the observer, all the clocks are facing the wrong way. According to Navy air force pilots, clocks were not issued but privately purchased and were evidently expensive luxury items. After completing training, many Navy air force pilots received clocks as gifts from friends or relatives. However, most Navy pilots reported that they never had a clock. Obviously, the practices of Navy and Army pilots were very different. It is also important to note that taking a clock from an aircraft without permission was considered theft. Anyone caught doing so was severely punished.



Figures 40 to 42. Seikosha large commander watch. This watch is 65mm in diameter with a standard size 7-jewel pocket watch movement. It would not have been usable for navigation purposes requiring great accuracy. The marking on the back states, "Army no. 3822."

Figure 43, left. Closeup of Army Air Corp officer with aircraft clock.

Figure 40.



Figure 41, above.
Figure 42, below.



Commander's Watches

The dial of the Seikosha large pocket watch shown in Figures 40-42 has a typical navigation-clock design. Despite its 65 mm case diameter, the piece has a standard size pocket watch movement—17½ ligne with 36-hour operating duration and seven jewels; it's a screwed bimetal movement with Breguet spiral. However, it would not have met the precision operating demands of a navigation watch.



Figures 44 to 46, left to right. A Seikosha pocket watch with a central second hand and movement base identical to aircraft clocks. The dial marking translates as: "time 1 day movement aviation watch."

Pocket Watches

The watch shown in Figures 44-46 was manufactured by Seikosha, and its features include a 36-hour operating duration, 17½ ligne, 15 jewels, bi-metal movement with Breguet spiral, nickel or chrome-

plated housing, Arabic numerals, illuminating points on each digit, ca. 2½ inches tall, and a smoked glass crystal. The dial is white or black, the digits are large, and next to them are small illuminating dots. There are various different

second indicators and scales. A chain or a strap made from parachute silk allowed the watch to be worn around the neck. Some naval inspection markings, as well as the aviator's initials and personal engravings, are to be found on the back of the watch.

Table I. Some of the Kanji characters shown on the timepieces in this article.

Armed Forces		Producer	
水	water = torpedo boat or submarine	愛	Aik
航	navigation	愛知時計電機株式会社製造	Aik. Tokai Denki Co. Ltd.
海軍	Navy	セイコー 精工會	Seiko
空軍兵	Air Corps	東洋時計株式会社	Toyo Denki KK
陸軍	Army	Type of watch or clock	
砲	Artillery	音響測速器	acoustic distance meter
陸軍航空部	Army Air Corps	暗室時計	dark room
Navy base		飛行時計	aviation watch
呉	Kure	一〇式飛行時計	plink watch type 100
ナゴ	Nagoya	活動写真銃	camera camera watch
水	"	夜光毎日携	luminescent 1 day movement
東	East (Tokyo)	一型(改一)	type 1 (mod. 1)
サ	Saiki	秒時計一型乙	second time type class 2
京東	Tokyo East	測秒器	second timer
三	Yokosuka	八九式	type 89
		一週開携	1 week movement

Artillery Chronographs

When dealing with Japanese military timepieces, one regularly encounters Seikosha artillery chronographs. These pieces were used to measure all types of intervals. The Swiss-made Moeris pocket chronograph (Figures 47-50) was used by the Japanese aviation corps. It is marked "Type 89 canon camera," and the characters on the reverse side translate as "Air Force Second-Clock Type 1." It was fitted as part of an aircraft's onboard camera setup.

Figures 51-53 show an example from the Navy. Characters translate as "Second-Clock, Type 1, Class 2." Also engraved on the case back is the number 117 and a symbol in a circle that means "water." This indicates that the watch was used on a torpedo boat or submarine.



Figure 47.



Figure 48.



Figure 49.

Figures 47 to 50. An artillery chronograph with black dial by Moeris, Fritz Moeri Sa, St. Imier/Switzerland. The marking on the back translates as: "type 89 artillery camera."

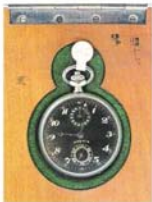


Figure 50.



Figure 53.

Figure 51.



Figure 52, left.

Seikosha artillery chronographs; Figures 51 to 53. The back of watch no. 117 has markings that translate as "second watch type 1 class 2"; the sign means "water" and shows that the watch was intended for use on a torpedo boat or submarine.



Seikosa artillery chronographs: Figures 54 to 56, left to right. The marking on the back of this artillery chronograph translates as "Air Corps second watch type 1."



Figure 57, left.

Figure 58, right.



Figure 59.

Figure 60.



Figure 61.



Figure 62.

Figures 59 to 62. Seikosha artillery chronograph in a nice wooden box marked, "acoustic distance meter." Markings inside the box show the sign of the Navy base "East Tokyo." The case back markings translate as, "second watch type 1 class 2, artillery no."

Stopwatches

As with chronographs, stopwatches, examples of which are shown in Figures 63-71, were used to measure time intervals in many different fields. Stopwatches were most commonly used for artillery range finding. The stopwatch measured the time difference between the flash and the bang produced by an artillery discharge. The difference in velocity between light (300,000 km/sec) and sound (300 m/sec) was used to calculate a target's distance. The word "Phonotelemeter" in Latin characters was sometimes printed on the dials of Seikosha stopwatches. "Acoustic Distance Measurer" was sometimes engraved on the covers in Kanji. Stopwatches were also used for long-range targeting, or on board torpedo boats and submarines to measure torpedo running time.

Figures 66 to 68, top right and bottom. The stopwatch in a box, stamped on the inside, "Tokyo."



Figures 63 and 64, above center and right. A stopwatch with scaling up to 20,000 mm, the distance of the object. Figure 65, below left. The markings stamped inside the wooden box translate as, "acoustic distance meter," the brand of K. Hattori (K H), and the navy base "East Tokyo."





Figures 69 to 71, left and below. A Seikoshu stopwatch of the Army Air Corps. Marking on the box: "second timer." Marking on the watchcase back: "for an ocular of the Army Air Corps."



The Oversized Aviator's Watch

This watch, shown in Figures 72A-72C, was made by Seikoshu. It has a 17-jewel bimetal movement with Breguet spiral, an indirect central second indicator, a nickel-coated case with twisting bezel, Arabic numerals with enlarged 3, 6, 9 and 12, self-illuminating digits on a black face, and it is nearly 50 mm in diameter. It has two roughly 15cm long, broad leather straps. The straps were long enough to enable the pilot to wear the watch on his arm over his thick flying jacket. As with the Seikoshu aircraft clocks, these watches were not issued by the military but were privately owned. The central second movement is the same as that of the aircraft clock. It also moves at the same basic caliber as the pocket watch with the small second hand. It is not shock-proof. The large winding crown allowed the watch to be wound or set while wearing gloves. The watch did not bear the star or anchor markings of Japan's two military branches. However, photographs conclusively show that both Navy and Army pilots made use of this watch.



Figure 72A.



Figure 72B.



Figure 72C.

Figures 72A to 72C, above. An aviator's large wristwatch by Seikoshu, with a turnable bezel for elapsed time marking, 17 jewels, and original leather straps. This watch is also seen with the winding knob at the "12."



Figure 73, above. Manned flying bomb "Onika," a suicide vehicle, liberated at Iwo Jima, no. 1-18, with the star of the Army. (Fleet Air Arm Museum)

The Wristwatches

There were watches of this type, samples of which are shown in Figures 74 and 75, with and without twisting bezels, and with differing casings. For the most part, the dial faces are inscribed with the Army star or the Navy anchor, as well as the "Seiko" brand name. Arabic numerals were on all the watches. The Japanese numerals were very often changed during marking.

Suggested Literature:

Kesaharu Imai, *Military Watch Encyclopedia* (Green Arrow, ISBN: 4-7663-3185-0).

Figure 76. A group of Army men with one wearing a small wristwatch. (Imai)



Figures 74 and 75, left and below.

Wristwatches by Seikoshi, with small second bit. Those shown here show the mark of the Navy. (Röhrner, Imai)



Kesaharu Imai, *Zeitschrift 'mono'* (Nr. 177, 1990).

Gary D. Nila, *Japanese Aviation Timepieces* (Society of Military Horologists, 1993).

John Mitchell, *A Collection of WW II Japanese Military Timepieces* (Society of Military Horologists, 1997).

Marvin E. Whitney, *Military Time Pieces* (American Watchmakers Institute Press, 1992, ISBN: 0-918845-14-9).

About the Author

Konrad Knirim is author of the new book *Military Timepieces, 150 Years of Watches and Clocks of the German Forces*—second edition, with English text, 636 pages, more than 3000 color photos of more than 1000 timepieces. ISBN 3-89355-232-4, \$160 U.S.

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