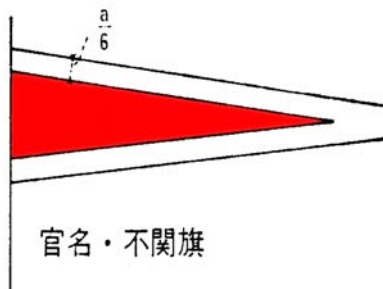


# Japanese Navy Signal Flags

By  
David Dickson



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## Introduction

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"Signals and Instructions" may be a bit misleading since there is a lot more doctrine (i.e. instructions) here than signals. In my quest for translated Japanese texts on doctrine and tactics I kept encountering flag signals, something that I find fascinating. Recently I was able to compile the Japanese signal flag inventory and illustrate them in color. The title is taken from Sir Julian Corbett's second volume on the Fighting Instructions of the Royal Navy in the sailing ship era; SIGNALS AND INSTRUCTIONS.

In a sense the three legs for handling a formation of ships in battle are Doctrine, Tactics and Signaling. Imagine for a moment that before the Battle of Jutland the Royal Navy and the Imperial German Navies had no doctrine for deploying their forces, disengaging in the event their "T" was capped or other maneuvers. Doctrine imbues the captains with their commander's wishes should such problem present itself. In the first instance the tactic(s) would be starboard wing or port wing deployment, and in the second a simultaneous turn away. In the first instance the signal would be just three flags from the Royal Navy Signal Book: Equal Speed; Charlie; London. A quick reference to the signal book would reveal Admiral Jellicoe's order. In the latter the same would be true when Admiral Scheer signaled for a reversal of course by a simultaneous turn to starboard (*Gefechtskehrwendung nach steuerbord*). He did not do so by spelling out that long phrase but by reference to the IG's signal book, a green (upper right half) over white flag (lower left half).

Much has been written of the history and ships of the Imperial Japanese Navy. Though there are books which discuss their doctrine and tactics there has been almost no reference to original sources. The reasons for this omission are numerous. Among them is the wholesale destruction of many of the original documents at war's end. Though more and more items are surfacing much may never be found or recovered. Another reason is the language barrier. Until quite recently most of the material that has survived was inaccessible to those who did not speak, read or write Japanese and was of little interest to Japanese language students generally. The latter problem is compounded by the fact that the Imperial Japanese Navy had its own, sometimes unique, nomenclature that is dying as those who spoke it die.

This apparent void can be partially filled from a source often overlooked; captured and translated original documents. During the war many documents related to doctrine, tactics and the like fell into the hands of Allied forces. They were translated and distributed to various interested commands. Through the years I have collected many of those documents.

There are several excellent English language publications which cover the run up to the war and its first year. I refer specifically to "Japanese Cruisers of the Pacific War" by Eric LaCroix and Linton Wells II, "Kaigun" by David Evans and Mark Peattie, "Sunburst" by Mark Peattie and "Shattered Sword" by Jon Parshall and Tony Tully.

## I. Signal Books, Signal Flags and Naval Signaling

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“I have deemed it very possible that this country may have to put to sea in a future war from thirty to forty fifty and even sixty sail of the line in one collective body...It has not appeared to me that we have any common opinion amongst us how such a force is to be trained and conducted to act with uniformity and effect.”

Letter from Admiral Richard Lord Howe, First Sea Lord, 1783-8, to  
Admiral Sir Roger Curtis, Howe's former flag captain

When Admiral Howe penned this letter what we now understand as the art of naval signaling did not exist, at least in the Royal Navy. Signals were numeric and referred to paragraphs of “Fighting Instructions” the Royal Navy's doctrinal pronouncements. Howe saw a need for a tactical signal book that dealt with specific maneuvers, formations and the like. The long needed reforms he foresaw in his letter was the “Signal Book” in which “signals were no longer included in the Instructions, and the Instructions sank to a secondary place of being ‘explanatory’ of the Signal Book. Many naval historians credit much of the success at Trafalgar with these reforms. As most modern sailors know signals are the heart and soul of naval tactics. A bridge watch standing officer will refer to the Signal Book more than once on most watches and will rarely open the modern equivalent of “Fighting Instructions”.

### SIGNAL BOOKS:

Naval Signal books generally consist of two main sections together with chapters on signal method and illustrations of signal flags in use by the particular navy. There may be chapters devoted to the colors of various navies and merchant services, aircraft markings, special flags such as those used by flag officers and the like. The two main sections are the decode section and encode sections. In western navies the decode section is arranged alphabetically; A-Z; AA-ZZ, etc. with special naval signal flags/pennants such as course, speed, formation and the like at the end. Presumably the IJN decode section would have been arranged using one of the kana methods; either the I-RO-HA-NI or the modern A-I-U-E-O, KA etc. If the flagship displays the signal BZ one would look alphabetically for that signal and find a text that “decodes” the message. In this case the text would be “well done”. For encoding most phrases used in naval signaling are well understood so an alphabetical index of common phrases such as FORMATION; SPEED; COURSE, TURN; CORPEN, Standard distance (etc), Standard order, Guide, Rotate formation axis, reorient screen (method X), etc is included. The encode section and decode section can run into hundreds of pages.

## SIGNAL FLAGS:

The core of most navies signal flag inventory is the International Signal Flag set which consists of 26 Roman alphabet flags, 10 numeral pennants, three repeaters and the Code/Answer pennant. In addition to these flags and pennants navies have their own set of special pennants and flags that serve the special needs of navies, such as maneuvering in formation, etc. There are number flags that are used to designate course, speed, distance and similar tactical information. The numeral pennants are used primarily for administrative purposes; i.e. hull number(s) of ships, unit number(s) and the like.

## NAVAL SIGNALLING

Generally speaking the flagship originates most flag hoist signals. Some exceptions would be sighting reports, man overboard, breakdown signals, etc. Signals are read from outboard halyard in, and top to bottom. When making a signal the flagship would hoist the flags close up ("two blocked" in USN WWII jargon). As the flags are being read the signalmen on the recipient ship(s) hoist them "at the dip", that is to say not close up. The flag ship signalmen read the flags on the other ships to insure that they are hoisting the same flags as the flagship. When the recipient ships have read and understood the hoist they will hoist the signal close up. When all ships have the signal close up and the flagship is satisfied they have the signal right then and only then the signal may be executed. The signal is executed by the flagship lowering its flags. The other ships do likewise and the ships perform the maneuver called for in the signal.

## II. Imperial Japanese Navy Signals and Instructions

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Like all navies the Imperial Japanese Navy (IJN) used signal flags for all kinds of purposes and like all navies they used a mix of international flags and pennants, and special IJN flags and pennants. They divided their signal flags into two broad categories, which were, in turn further divided into five sub sets.

The first category was known as Letter or Number flags (Goki) and consisted of two sub sets:

- Special Navy Number Flags (Sujiki): The Number Flag set consisted of ten navy special flags unique to the IJN that represented the numbers 0-9.
- International Letter Writing Flags (Mojiki): The International Roman alphabet (Romaji) flag set was the same set in use today. It consists(ed) of the 26 letters in the Roman alphabet.

The Letter or Number Flags (Goki) were used to make signals in coded letter/number groups, and set out numbers for course, bearing, distance, speed and the like as commonly used in naval signaling. Most navies have an equivalent to the Navy Number Flags.

The second category was known as Special flags (Kubetsuki) and consisted of three sub sets:

- Special Naval maneuver flags (Undokubetsuki): It consisted of ten triangular pennants (which included the three international repeaters) and generally performs the same functions as the USN/RN etc. flags and pennants: corpen, turn, formation, etc.
- Ships, Fleets, and Divisions flags (Kanshomeikubetsuki). It consisted of fourteen pennants. Ten of these are also the international numeral pennants, thus serving dual functions. The balance are unique to the IJN. This set corresponds roughly to the division, squadron etc flags in use in the USN and RN.
- Special classification flags (Shingokubetsuki). It consists of nine pennants. One of those pennants is also the international answering pennant. The balance are unique to the IJN. The set corresponds roughly to USN and RN pennants for interrogatory, prep, etc.

This booklet treats the flags by category and sub set as follows:

- Navy Number Flags; the Arabic number, Japanese pronunciation of the Arabic number, some examples of use and a hira gana reading.
- The Roman letter (Romaji), IJN phonetic reading, examples of use, some explanatory notes and kana reading.

- Special Flags (Kubetsuki), the Kanji reading (abbreviated and long version), kana readings of certain flags, doctrinal statements (Yoho) on how the flags are to be used in signals, and examples of signals with reference to doctrine.



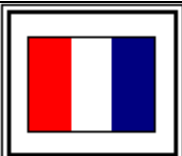





### III Japanese Signal Flags – International Alphabet (Mojiki)


International Letter Flags: The same 26 International Letter Flags in use today.

International Alphabet Flags/Letter Writing Flags (Mojiki)				
	Flags	Kana reading	Examples of Use	Notes
Alphabet Flag A IJN Phonetic Gozen		I	Tai A: Ko Force	
Alphabet Flag B IJN Phonetic Aka		Ha	Tai B: Otsu Force	Aka as in red
Alphabet Flag C IJN Phonetic Sisu		Ni	Tai C: Hei Force	
Alphabet Flag D IJN Phonetic Tesiki		Ho	Tai D: Tei Force	
Alphabet Flag E IJN Phonetic Isuto		He	Tai E: Bo Force	
Alphabet Flag F IJN Phonetic Efu		Chi		Efu as in “F”
Alphabet Flag G IJN Phonetic Shairo		Ri	Tai G 1: Group 1  Tai G A: Group Ko	



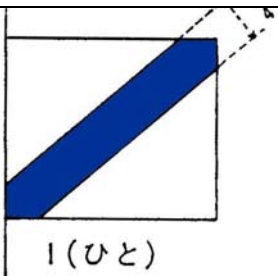
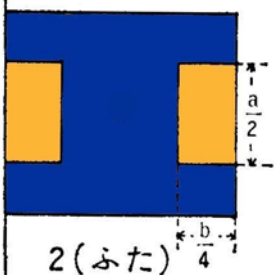
Alphabet Flag H IJN Phonetic Takaso		Nu	H is used to show that a distance is $\frac{1}{2}$ km (i.e. 500 meters), as in: Jin ZA S Kei 2H: Assume circular formation A. Distance between carrier and cruisers will be 2.5km where H equals $\frac{1}{2}$ km	
Alphabet Flag I IJN Phonetic Takuten				
Alphabet Flag J IJN Phonetic		Ra		
Alphabet Flag K IJN Phonetic Ke		Wa	K: Knots	Ke as in "K"
Alphabet Flag L IJN Phonetic Eru		Ka	L: Port	Eru as in "L"
Alphabet Flag M IJN Phonetic		Yo		
Alphabet Flag N IJN Phonetic Kioren		Ta	Tai N: Stand By (Taiki) Force	
Alphabet Flag O IJN Phonetic Oba		Re		
Alphabet Flag P IJN Phonetic		Tsu		
Alphabet Flag Q IJN Phonetic Kina		Ne		

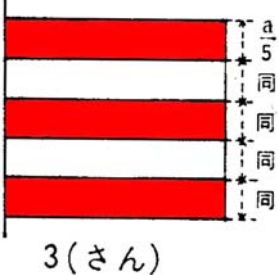
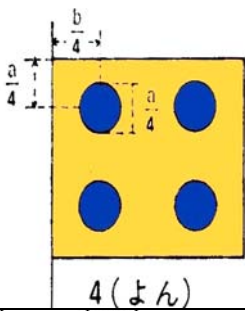
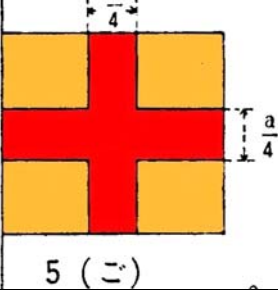
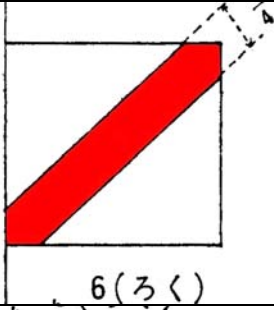
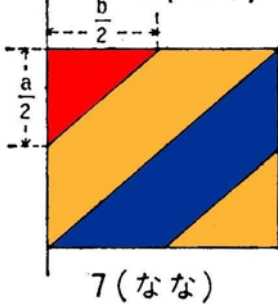
Alphabet Flag R IJN Phonetic Aru		Na	R: Starboard  R is used to designate distance destroyer(s) should take from the guide in certain formation signals. See S below for example.	Aru as in “R”
Alphabet Flag S IJN Phonetic Kigan		Ra	S is used to designate distance cruiser(s) should take from the guide in certain formation signals as in Jin ZA S Kei 2H: Assume circular formation A, distance between carrier and cruiser(s) will be 2.5km.  Tai S: Maintenance (Seibi) Force	
Alphabet Flag T IJN Phonetic Tebu		Mu	T is used to designate distance battleship(s) should take from the guide in certain formation signals. See S above for example.	
Alphabet Flag U IJN Phonetic Yu		U	Tai U 0: Group 10  Tai U 1: Group 11 and so on to Kantai U 9	
Alphabet Flag V IJN Phonetic But		Ku		
Alphabet Flag W IJN Phonetic Tafuryu		Se		
Alphabet Flag X IJN Phonetic Etsukusu		Ma	Tai X: Carrier Force	
Alphabet Flag Y IJN Phonetic Wai		Ke	Jin Y 24 Assume Alert Cruising Order 24: Y indicates a Diversion Attack Force standard formation  Tai Y: Diversion Attack Force	Wai as in “Y”

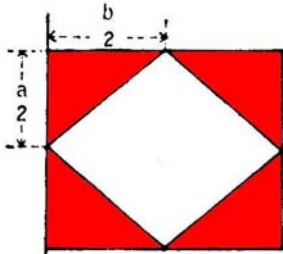
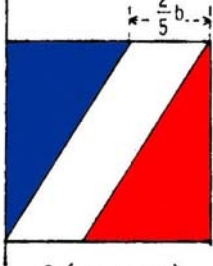
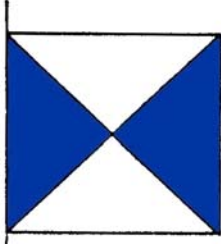
Alphabet Flag Z IJN Phonetic Zetsuto		Fu	Jin ZA: Assume circular formation A. Z being used to designate a formation as circular.  Tai Z: Main Force	Zetsuto as in "Zed"
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The International Alphabet Flags were used in two ways generally. First in combination with other flags or pennants they would indicate flag combinations in the signal book; for example Jin ZA; Naval Maneuver Pennant Jinkei=formation; Z=circular formation; A=formation A in Mobile Force Doctrine. Second as kana when spelling of a word was required.

Number Flags: Ten Special Navy number flags representing the numbers 0-9

Navy Number Flags (Sujiki)	Flags	Notes (reading)	Examples of Use
Navy Number Flag 1  IJN Phonetic Hito		Kun	1 HB Kei 370 10 Ho Kei 3 1250: Detected radar 370 mcs position 10 degrees sensitivity 3 time 1250  1 OG: Detected enemy submarine voice communication frequency, position, sensitivity and time as above.  1OR: Detected enemy aircraft communication, etc.
Navy Number Flag 2  IJN Phonetic Wata			

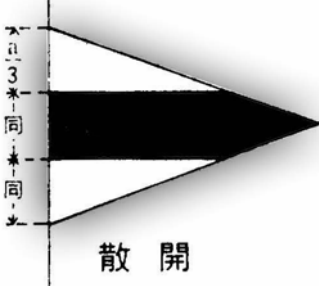
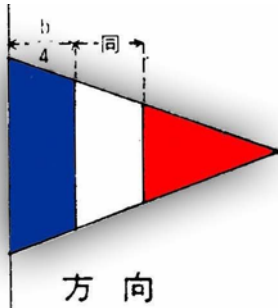
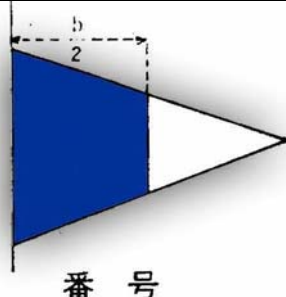
Navy Number Flag 3  IJN Phonetic San		On	
Navy Number Flag 4  IJN Phonetic Yon		Kun	
Navy Number Flag 5  IJN Phonetic Go		On	
Navy Number Flag 6  IJN Phonetic Roku		On	
Navy Number Flag 7  IJN Phonetic Nana		Kun	

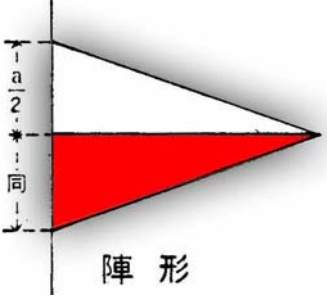
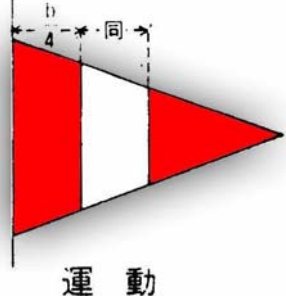
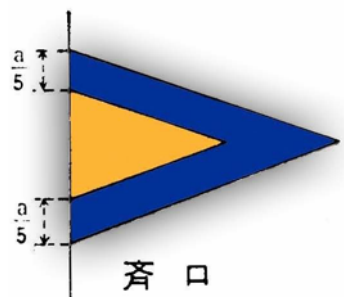
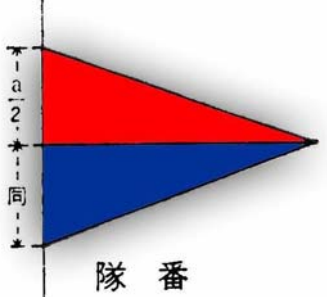
Navy Number Flag 8  IJN Phonetic Hachi	 8 (はち)	On	
Navy Number Flag 9  IJN Phonetic Kokono	 9 (この)	Kun	
Navy Number Flag 0  IJN Phonetic Rei	 0		

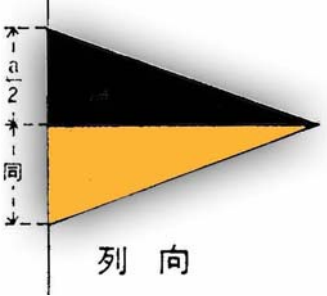
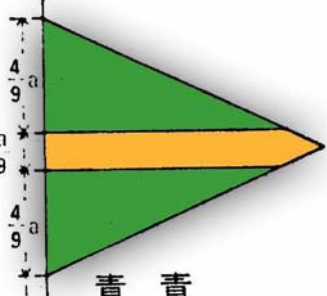
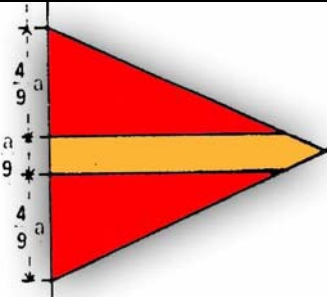
The Kanji have at least two readings: The Chinese reading (On-yomi) in which the character is voiced somewhat like it would sound in Chinese. This is often to distinguish homonyms. The native Japanese reading (Kun-yomi) would be foreign to Chinese and is often used in root words. In this table there is a mix of the two. Here there is a mixture of the two.

## IV. Special Navy Flags and Pennants (Kubetsuki)

Special Naval Maneuver flags: Ten triangular pennants which include the three international repeaters. These pennants perform the same function as the modern corpen, turn, formation, etc.

Naval Maneuver Pennants (Undokubetsuki)				
	Pennants	Kana	Examples	Notes
Naval Maneuver Pennant San (Sankai)  Meaning: Dispursing		Sa	San: Separate into same number of groups as there are aircraft carriers  Tai 3 Ban San 240 Ho: Group 3 will take station on a bearing of 240 from guide	Inter-national 3 <sup>rd</sup> Substitute
Naval Maneuver Pennant Ho (Houko)  Meaning: Bearing/Course		Shi	Kan(meï) Ho 30: Change course to 030  Jin ZB 30 Ho 250: Assume circular formation B Axis 030 Course 250. Note the placement: Axis before Ho and course after.  Jin ZC 60 Ho: Assume circular formation C. Axis 060, course unchanged.  Tai 3 Ban San 240 Ho: Group 3 will take station on a bearing 240 from guide	
Naval Maneuver Pennant Ban (Bango)  Meaning: Direction		N	Kan(meï) 330 Retsu Ban: Kan; Change course 330; new course Retsu Ban; Simultaneous turn  30 Ho Ban; Change fleet axis to 030	Inter-national 2 <sup>nd</sup> Substitute

<p>Naval Maneuver Pennant Jin (Jinkei)</p> <p>Meaning: Formation</p>		Yu	<ol style="list-style-type: none"> <li>1. Jin ZA-Jin ZS: Assume designated circular formation.</li> <li>2. Jin 2A-Jin 2C: Assume A/S formation designated</li> </ol>	
<p>Naval Maneuver Pennant Un (Undo)</p> <p>Meaning: Movement</p>		To	Un Ko(ku) 1-Un Ko(ku) 6: Assume take off and landing formation 1-6	
<p>Naval Maneuver Pennant Sei (Seido)</p> <p>Meaning: Simultaneous Turn</p>		Ro	<p>Sei Koku(ku): Turn together to starboard and stand into wind</p> <p>Koku(ku) Sei: Turn together to port and stand into wind</p>	Inter-national 1 <sup>st</sup> Substitute
<p>Naval Maneuver Pennant Tai (Taiban)</p> <p>Meaning: Tactical Unit</p>		Chi	<p>Tai A: Ko Force</p> <p>Tai B: Otsu Force</p> <p>Tai C: Hei Force</p> <p>Tai D: Tei Force</p> <p>Tai E: Bo Force</p> <p>Tai N: Stand By (Taiki) Force</p> <p>Tai S: Maintenance Force (Seibi)</p> <p>Tai X: Carrier Force</p> <p>Tai Y: Diversion Attack Force</p> <p>Tai Z: Main Unit</p> <p>Tai 1: Group 1</p> <p>Tai 2: Group 2 etc</p> <p>Tai U0: Group 10</p> <p>Tai U1: Group 11</p>	

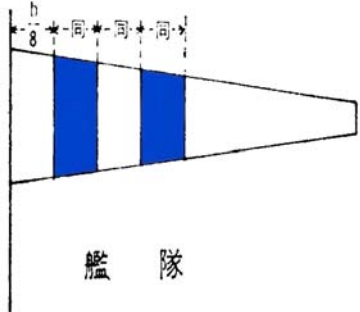
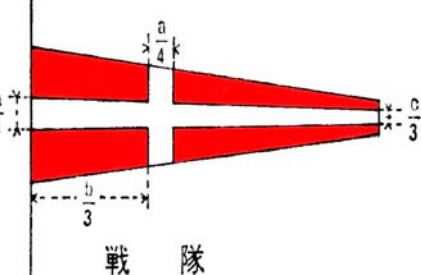
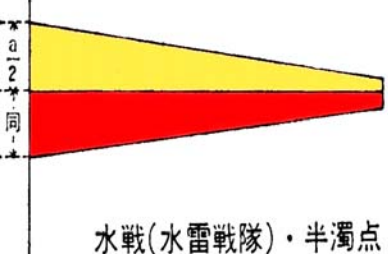
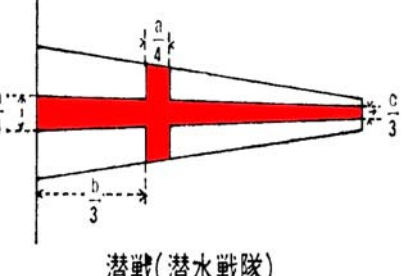
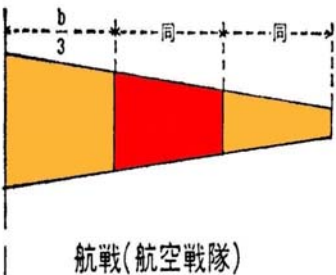
			Tai G1: Group 1 Tai GA: Ko Group Tai 3 Ban San 240 Ho: Group 3 will take station on bearing 240 from guide	
Naval Maneuver Pennant Retsu (Rekkon)  Meaning: Row/Line/Direction		Ru	Kan(me) 330 Retsu Ban: Kan; Change course 330; new course Retsu Ban; simultaneous turn.	
Naval Maneuver Pennant Ao (Ryuko)  Meaning: Green				
Naval Maneuver Pennant Aka (Seki)  Meaning: Red				

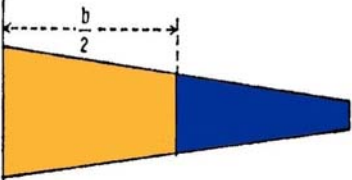

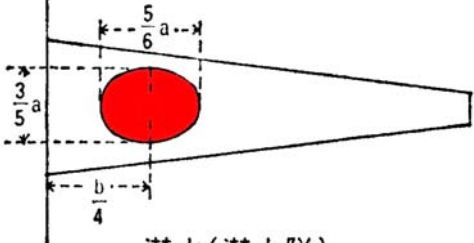
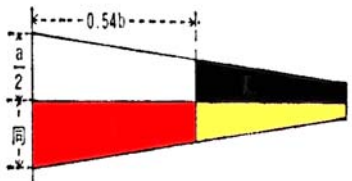
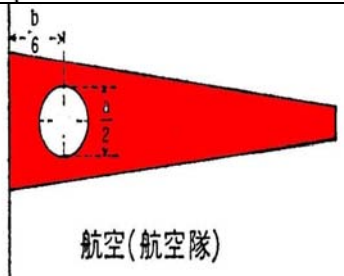
### Ships, Fleets and Division flags.

Fourteen pennants including all of the International numeral pennants. These correspond roughly to the modern division, squadron, etc flags and pennants

Ships, Fleets and Divisions Pennants (Kanshomei kubetsuki)				
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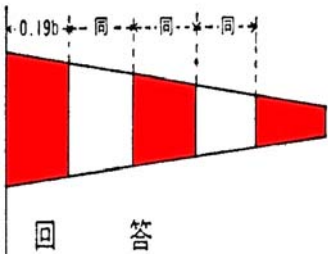
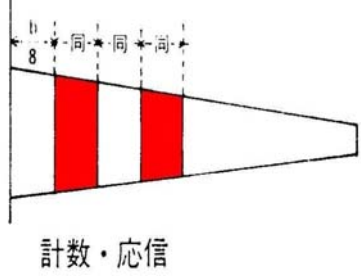
	Pennants	Kana	Examples of use	Notes
Ship Pennant Kan (Kantai)  Meaning: Warship (Fleet)	 艦 隊		Kan 9F 3: Ship 9F take screen position 3	
Ship Pennant Sen (Sentai)  Meaning: Battleship/Cruiser (BatDiv/CruDiv)	 戦 隊	O		International numeral pennant 4
Ship Pennant Suirei  Meaning: (Torpedo/destroyer Squadron)	 水戦(水雷戦隊)・半濁点			International numeral pennant 7
Ship Pennant Sensui  Meaning: Submarine (Subron)	 潜戦(潜水戦隊)			International numeral pennant 8
Ship Pennant Ko (Ku)  Meaning: Carrier (Cardiv)	 航戦(航空戦隊)			International numeral pennant 0

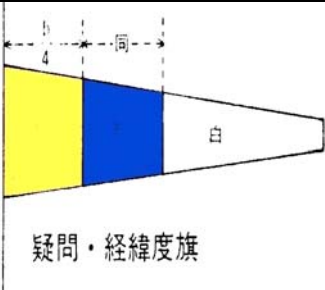
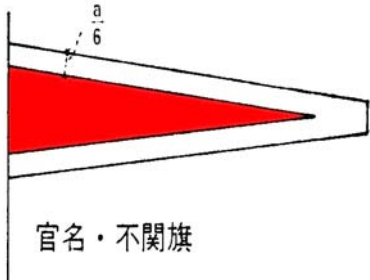
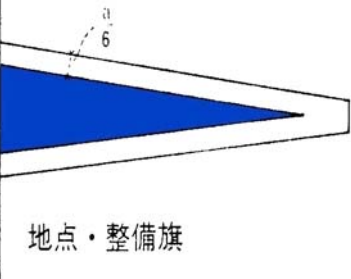
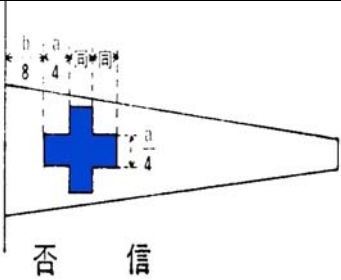
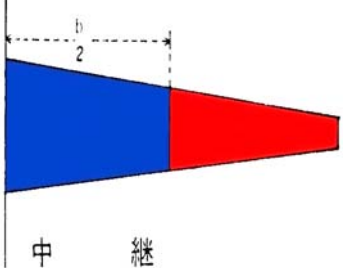
Ship Pennant Ku (Ku)  Meaning: Destroyer (Desdiv)	 駆逐(駆逐隊)			International numeral pennant 5
Ship Pennant Sou (Kai)  Meaning: Minesweeper (Mindiv)	 掃海(掃海隊)			International numeral pennant 6
Ship Pennant Maru (Sunsui) Submarine (Subdiv)	 潜水(潜水隊)			International numeral pennant 1
Ship Pennant Maru (Ku)  Meaning: Subchaser	 駆潜(駆潜隊)			International numeral pennant 9
Ship Pennant Ku (Koku)  Meaning: Air Group	 航空(航空隊)		Un Ku 1-Un Ku 6: Assume take off and landing formation(s) 1-6  Sei Ku: Turn together to starboard and stand into	

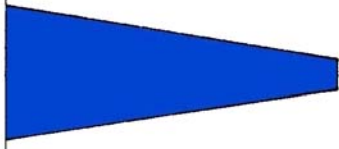
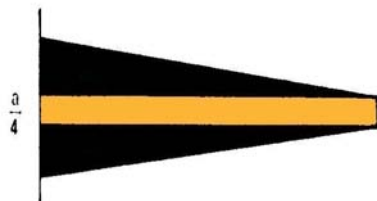
			wind	
			Ku Sei: Turn together to port and stand into wind	
Ship Pennant Kai (Kaibo)  Meaning: Coastal Defense Ship				International numeral pennant 3
Ship Pennant Sho (Mei)  Meaning: Place/Base				International numeral pennant 2
Ship Pennant Tan (Tei)  Meaning: Cutter/boat				
Ship Pennant Me (Senme)  Meaning: Vessel's name				

### Special Classification Flags:

Nine pennants which correspond to the modern interrogatory, prep, etc. One of these pennants is also the international answer pennant.

Special Classification Pennants (Shingokubetsu uki)				
		Kana	Examples of use	Notes
Classification Pennant Kai (Kaitai)  Answering				International Answering Pennant
Classification Pennant Kei (Keisuu)  Counting of numbers			<p>Jin ZA S Kei 2H: Assume circular formation A. Distance between the carrier and cruisers will be 2.5km. H=half of one km</p> <p>Kei 24 K: Speed 24 knots</p>	Used to indicate that the Ships Fleets and Divisions Pennant(s) that follow are given their International numeral meaning or that the Navy Number Flags that follow are used to indicate a number of items.

<p>Classification Pennant Mo (Gimo)</p> <p>Interrogatory</p>	 <p>疑問・経緯度旗</p>			
<p>Classification Pennant Kan (Kanmei)</p> <p>Name, rank, file (change course)</p>	 <p>官名・不関旗</p>		Kan(me) Ho 30: change course while maintaining same relative bearing to guide.	
<p>Classification Pennant Chi (Chitei)</p> <p>Nautical or Geographic</p>	 <p>地点・整備旗</p>			
<p>Classification Pennant Mi (Mihi)</p> <p>Navigation</p>	 <p>否 信</p>			
<p>Classification Pennant Chu (Chukei)</p> <p>Relaying</p>	 <p>中 継</p>		Chu: Immediate cessation of light signaling	

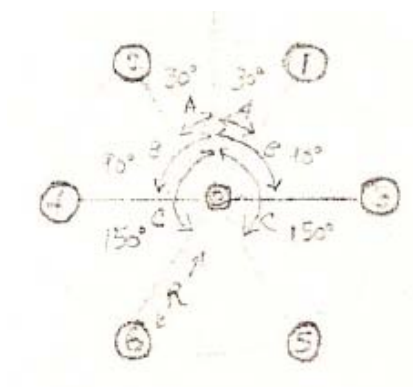
Classification Pennant Su (Waon)  Sound	 和 音			
Classification Pennant Hi (Hyoji)  Time Display	 標 時		Un ko A Hyo: Take off and landing for today will be according to Method A Un Ko B Hyo Kei 24 K: Take off and landing for today will be according to Method B Speed 24 knots	

## V. Carrier Signals and Formations

This section provides examples of how signals were combined for and used for operational purposes – in this case to control carrier formations.

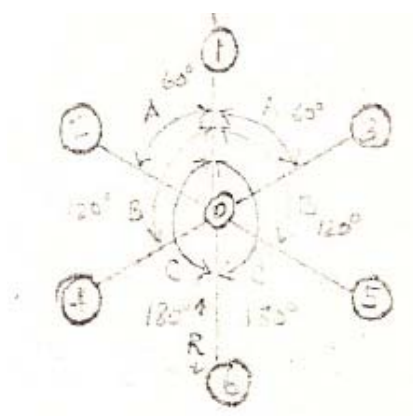
### CIRCULAR FORMATIONS (AA Defense Formations)

Japanese group (fleet) commanders gave each ship in their formation a number-letter designation for the purpose of determining station. Angles and distances were signaled



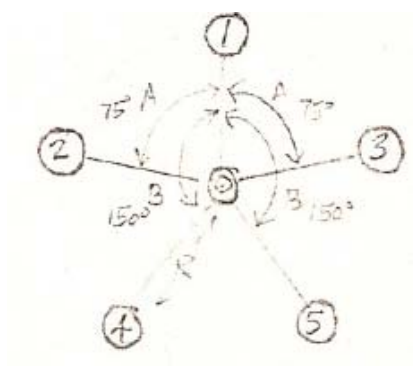
Signal: **JIN ZA**

Take circular formation "A"



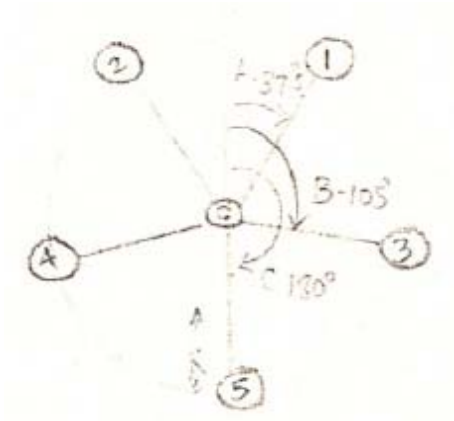
**JIN ZB**

Take circular formation "B"

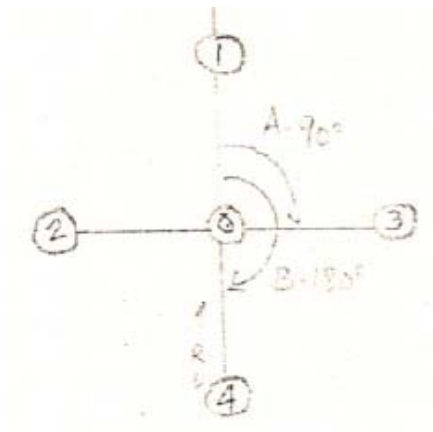


**JIN ZC**

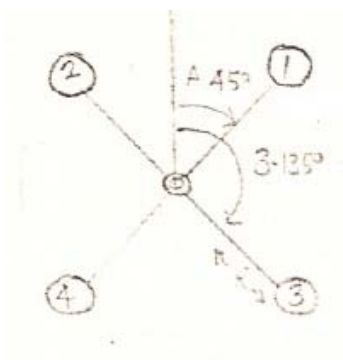
Take circular formation "C"

**JIN ZD**

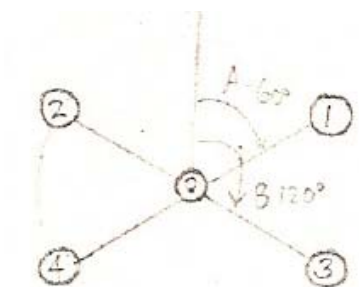
Take circular formation "D"

**JIN ZE**

Take circular formation "E"

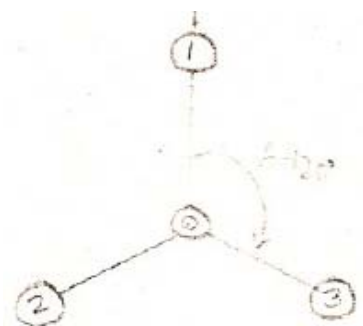
**JIN ZF**

Take circular formation "F"

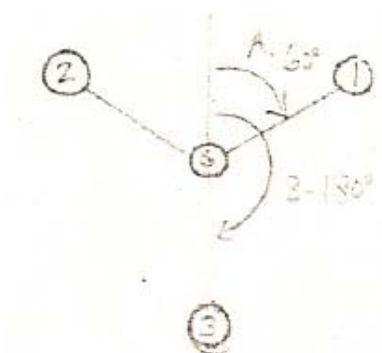
**JIN ZG**

Take circular formation "G"

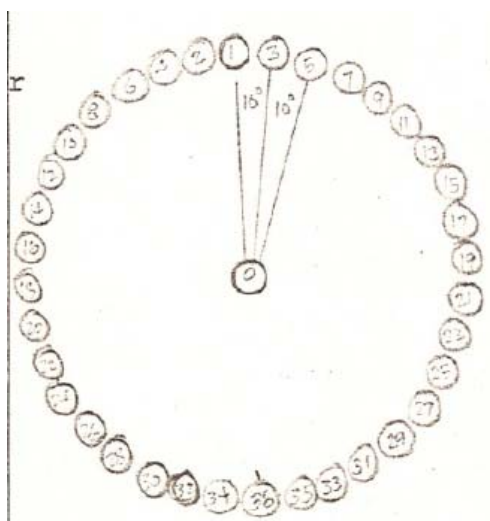


**JIN ZH**

Take circular formation "H"

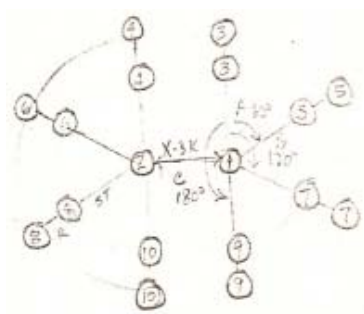
**JIN ZI**

Take circular formation "I"

**JIN ZK**

Take circular formation "K"

In taking this formation, the positions to be occupied by the screening vessels are normally indicated in advance.

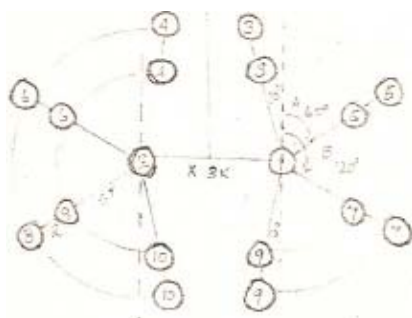


### JIN ZL

Take circular formation “L”

Group 1: 1, 3, 5, 7, 9

Group 2: 2, 4, 6, 8, 10

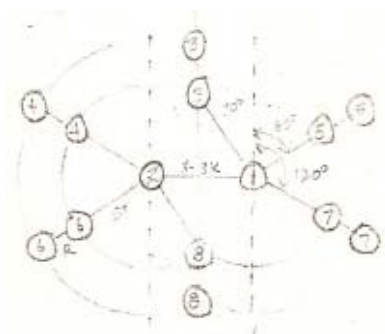


### JIN ZM

Take circular formation ‘M’

Group 1: 1, 3, 5, 7, 9

Group 2: 2, 4, 6, 8, 10



### JIN ZN

Take circular formation “N”

Group 1: 1, 3, 5, 7

Group 2: 2, 4, 6, 8,

Each ship in a Japanese tactical organization was given a number letter designation, for example, 9F. Screen positions were indicated thus:

**KAN 9F 3** which signified, “Ship #9F take screen position #3.

The inner circle in the formations is 2-km while the outer circle is 3-km. The standard distance, unless signaled otherwise was as follows:

Type of screening vessel	Distance between aircraft carrier and screening vessel
Battleship T	3.0-km
Cruiser S	2.0-km
Destroyer R	2.0-km

The letter symbols which follow the screening vessel type are as used in the accompanying diagrams.

To signal a distance other than that shown or an angle other than that show the signal would be as follows:

**JIN ZA      S KEI 2H**

JIN ZA signifies “take circular formation A”

S KEI 2H signifies “distance between the carrier(s) and cruisers will be 2.5-km (H=  $\frac{1}{2}$  of 1,000-m)

Or,

**JIN ZA      A 50 HO**

JIN ZA = “Take circular formation A”.

A 50 HO = “A shall be 50 degrees.”

Generally circular formations will maneuver as a signal unit. The carrier with the senior officer will be the guide unless otherwise signaled.

The general rules with regard to axis of a formation and course which applied to battleships and cruisers also applied to carrier circular formations. When the axis and course are different the signal will be thus:

1. **JIN ZB      30 HO 250**

JIN ZB = “Take circular formation B”

30 HO 250 = “Axis 30 degrees, course 250.

2. **JIN ZC      60 HO**

JIN ZC = “Take circular formation C”

60 HO = Axis 60 degrees, continue on present course.

3. **ZIN ZC**

JIN ZC = “Take circular formation C” The absence of any axis or course signal indicates that the axis and course remain as before.

## VI. Encode: Romaji, English & Examples

### KANA, NUMBER & LETTER FLAGS

**E**xplanatory Note: Romaji is the phonetic writing of Japanese words using the Roman alphabet. In this ENCODE section there are three types of entries:

**Romaji:** These typically consist of the phonetic rendering of the Japanese word, its English meaning, the type flag (i.e. Undo, Kansho, Shingo) and the arbitrary number given to that flag. The arbitrary number is based on its place on the color plates. Starting in the upper left hand corner first down and then left to right. The second entry in the table is illustrative: AKA is the phonetic for the Japanese word “red”. The flag is found in the Undo section and it is Undo #10. Un is the short form of Undo which is the short form of Undokubetsuki. The Japanese were as afflicted as much with the use of acronyms as any navy!

**English:** The format is similar to the Romaji. English word, Romaji for the name of the flag, flag type and flag number. The first entry in the table is illustrative. The flag for Air Group is KU which is found in the Kansho group as flag #10 of that group.

**Examples:** This Encode is not a comprehensive Signal Book. The IJN signal book was over 600 pages in length. The examples are inserted to show some examples taken from the signal appendices in various operations orders, standing orders and the like. These examples are in italics to set them apart from the other items in the tables. The sixth item Anti Submarine Formation is illustrative. The flags are separated by / thus in the first example JIN can be found in the tables and is defined as Formation, performing precisely the same function as the “formation” flag in the USN/RN signal books. Further examination of the entry JIN shows it is in the Undo section as flag #1.

**Kana:** The kana syllabary is a phonetic system of writing. It consists of 46 vowel and consonant vowel combinations and 25 variants. To spell out words that are not in the signal book certain flags were given alternate values as the basic 46 kana. Kana is in lower case in the text.

**Number Flags:** The spoken numbers are shown phonetically.

**Letter Flags:** Most educated Japanese are familiar with the Roman alphabet, however as a practical matter, it isn’t entirely useful since a number of Roman letters have no phonetic equivalent in Japanese, the letter “L” being the most famous example. The navy assigned a phonetic value to each flag that bore usually no relationship to its western pronunciation. The italics Roman letters represent the international letter flag and their phonetic value.

**Enumerations:** The Japanese used several methods to enumerate items; the Roman alphabet, Arabic numerals, Japanese numbers, Roman numbers and two native systems. The first is kana arranged by what is called the IROHA and the second a Chinese calendrical serialization which

uses certain Chinese calendar characters as a way of grading or ranking items. It is also used to serialize and is often interchangeable with A-B-C, etc.

In the IROHA all of the characters in the basic kana are arranged “alphabetically”, I-RO-HA-NI etc as a children’s poem to learn the basic kana, much like the ABC song sung in preschool in the US. The calendrical characters are: KO, OTSU, HEI, TEI, BO, KI, KO, SHIN, JIN, KI. Method or Force Ko might also be called Method A or Force A.

## **A: Gozen**

a: Kan mei Shingo (Shi 1)

Air Group: KU (Kokutai); Kansho (Kan 10)

AKA: Red; Undo (Un 10)

Angle: (Bearing); HO; Undo (Un 6)

Answering: KANTOO; Shingo (Shi 5)

Anti Aircraft Formation: see Circular Formation

*Anti Submarine Formation (example of signal): JIN/2-A=Assume AS formation 1*

*Note: The special signal flag JIN followed immediately by a number indicates an AS formation. The separated letter “A” corresponds with its numerical value. The method of separation is the use of a section of line (tack line) equal to the length of the extended fly of a flag.*

AO: Blue/green; Undo (Un 9)

*Axis of Formation (JIKUHOKO), Rotate (example of signal); 30/HO/BAN=Rotate*

*Formation Axis 30 degrees to the right (HO/BAN/30 would be to the left) Explanatory note: the formation axis is rotated in two common circumstances. First the formation is about to change course or there is a threat along the bearing of the new axis.*

*Axis of Formation different from base course (example of signal); 60/HO/130= Axis 060, Course 130 Generally this occurs when there is a threat along the bearing of axis or the base course and a course taken from time to time(as in flight operations) vary.*

**B****B: Aka**

BAN: Direction/course; Undo (Un 8) (2<sup>nd</sup> substitute)

Battleship: Battleship Division; SENTAI; Kansho (Kan 2)(p. 4)

Bearing: HO; Undo (Un 6)

Blue/green; AO; Undo (Un 9)

**C: Shisu**

Carrier Division; KOKUSENTAI; Kansho (Kan 5)(p. 0)

CHI (CHITEI); Nautical or Geographical; Shingo (Shi 3)

chi: see ti

CHU (CHUKEI); Relay; Shingo (Shi 2)

*Circular Formation (example of signal): JIN/Z/A=Take  
Circular formation 1 where JIN/Z=circular formation  
and A=its numerical equivalent.*

Counting Numbers: KEI (SUI); Shingo (Shi 4)

Course: RETSU; Undo (Un 2)

*Course change by following in the wake of the ship ahead (example  
of signal); KAN/HO/30*

*Course simultaneous, change of: (example of signal); 330/RETSU/BAN\**

Cutter/boat: TAN; Kansho (Kan 13)

**D: Teshiki**

Direction(Row; Line); RETSU; Undo (Un 2)

Direction; BAN (BANGO); Undo (Un 8)(2<sup>nd</sup> substitute)

Dispersing: SAN (SANKAI); Undo (Un 3) (3<sup>rd</sup> substitute)

## **E: Isuto**

e: Kantai; Kansho (Kan 1)

*Electronic Warfare (examples of signals):*

*1 H/B=Detected enemy radar/radio*

*KEI/370=370 mc.*

*10/HO=Bearing 10 degrees*

*KEI/3=1250=Time*

*1/O/G=Enemy submarine voice radio*

*KEI/5=Sensitivity 5*

*1/O/R=Enemy aircraft radio*

*KEI/5=sensitivity 5*

*1000=Time*

## **F: Efu**

File/Name/Rank; KAN (KANMEI): Shingo (Shi 1)

Fleet: KANTAI; Kansho (Kan 1)

*Flight Operations (examples of signals)*

*Take off and landing formation(s)*

*UN/KU/1=Assume take off and landing formation 1*

*Take off and landing formation with change of standard distance and bearing from guide.*

*UN/KU/1*

*A/45/HO=Angle A 45 degrees*

*X/KEI/6=X distance is 6km*

*Routine flight operations (CAP etc)*

*UN/KU/A=Today's flight Ops Method A*

*HYO*

*KEI/24/K=24 knots*

*Forced landings, aircraft will make;*

*KU/RR=Land abeam to starboard*

*KU/LL=Land abeam to port*

*KU/OO=Land ahead*

*KU/SS=Land astern*

Formation: JIN (JINKEI); Undo (Un 1)

Formation, Anti Aircraft; see Anti Aircraft Formation

Formation, Anti Submarine; see Anti Submarine Formation

Formation Axis, see Axis of Formation

Formation, Circular; see Circular Formation

*Formation, Dispersal of, when two or more carriers are dispersing into single carrier formations (example of signal)*

*SAN*

*Designation of station(s) for group as it bears from guide*

*TAI/2/BAN=Group 2*

*240/HO=will bear 240 from guide*

*Formation (Disposition), Alert Cruising (KEIKAIKOKO)(example of signal)*

*1. Y/21=assume disposition 1*

*2. Guide if other than 4S*

*3. Axis (if other than base course; see Axis heading)*

*4. Stations per sketch unless otherwise specified (see Station heading)*

*5. Interchange of stations*

*Formation (Disposition), Approach (example of signal)*

*1. F*

*2. Guide if other than 4S*

*3. Y/31*

*4. Axis*

*5. Course*

*6. Speed*

*7. Y 3km unless signaled otherwise*

*8. X 4km unless signaled otherwise*

fu: See hu

## **G: Shairo**

Green/Blue: AO; Undo (Un 9)



***H: Tokaso***

ha: B

he: E

hi: Hyo; Shingo (Shi 9)

HI (HYOGI): Time (display); Shingo (Shi 9)

ho: D

HO: Angle/Bearing; Undo (Un 6)

hu(fu): Z

***I: Takuten***

i: A

Interrogatory: MO (GIMO); Shingo (Shi 7)

***J***

JIKUHOKO; see Axis of Formation

JIN: Formation; Undo (Un 1)

***K: Wa***

ka: L

KAI (KAI BO): Coast Defense; Kansho (Kan 11)

KAN (KAN MEI): Name/Rank/File; Shingo (Shi 1)

KAN (KAN TAI): Warship/Fleet; Kansho (Kan 1)

KANTO: Answering; Shingo (Shi 5)

ke: Y

KEI: Counting numbers (distance); Shigo (Shi 4)

KEIKAIKOKO; See Formation, Alert Cruising

ki: KEI; Shi 4

ko: KANTO; Shingo; (Shi 5)

KO (KOKU): KOKUSENTAI; Carrier Division/Squadron;  
Kansho (Kan 5)(p. 0)

ku: V

KU (KUSEI/SEIKU): Turn

KU (KUCHI): Destroyer Division; Kansho (Kan 6)(p. 5)

## ***L: Eru***

Line: RETSU; Undo (Un 4)

## ***M***

ma: X

me: KANMEI; Shingo (Shi 1)

MEI: Name of vessel; Kansho (Kan 14)

mi: MI; Shingo (Shi 8)

mo: GIMO; Shingo (Shi 7)

MO (GIMO): Interrogatory; Shingo (Shi 7)

Movement: UN DO; Undo (Un 4)

mu: T

## ***N: Kiroren***

na: R

Name/Rank/File: KAN (MEI); Shingo (Shi 1)

Nautical (Geographic): CHI (TEI); Shingo (Shi 3)

Navigation: MI (MIKI); Shingo (Shi 8)

ne: Q

ni: C

no: BAN; UNDO (Un 8)

nu: H

### ***O: OBA***

o: SENTAI; Kansho (Kan 1)

O=Man overboard

### ***P: TSU***

### ***Q: KINA***

### ***R: ARU***

ra: S

Rank/Name/File: KAN (MEI); Shingo (Shi 1)

re: O

Red: AKA: Undo (Un 10)

Relay: CHU (KEI); Shingo (SHI 2)

RETSU: Row/Line/Direction; Undo (Un 2)

ri: G

ro: SEIDO; Undo (Un 5)

Row: RESTU; Undo (Un 2)

ru: RETSU; Undo (Un2)

## **S: KIGAN**

sa: SAN; Undo (Un3)

SAN (SANKAI): Dispersing; Undo (Un 3)  
(3<sup>rd</sup> substitute)

se: W

SEI: Simultaneous turn; Undo (Un 5)

SEN (SENTAI): Battle squadron; Kansho (Kan 2)  
(p. 4)

SHO (MEI): Base; Kansho (Kan 12)(p. 2)

si: HOKO

Simultaneous Turn: SEI (DO); Undo (Un 5)

so: SOU KAI: Kansho (Kan 7)

SOU (KAI): Minesweeping Division; Kansho  
(Kan 7)(p. 6)

Sound: SUI; Shingo (Shi 6)

*Station (example): KAN/9/F 3 = Ship 9F take station 3*

*Station (example): JIN/Z/A-S-KEI/2/H=Circular  
Formation #1 Cruisers at 2.5km from Guide.*

su:

SUI: Sound; Shingo (Shi 6)

Sub Chaser: MARU (KU); Kansho (Kan 9)

(p. 9)

Submarine Division: MARU SENSUI: Kansho(Kan 8)  
(p. 1)

Submarine Squadron: SENSUI: Kansho (Kan 4)  
(p. 8)

## ***T: TEBU***

ta: N

Tactical Unit: TAI (TAI BAN): Undo (Un 7)

TAI: (TAI BAN); Tactical Unit; Undo (Un 7)

TAN (TEI): Cutter; Kansho (Kan 13)

te:TAIBAN; Undo (Un 7)

TEI:

ti: F

Time Display: Hi (Hyoji); Shingo (Shi 9)

to: UNDOKI; UNDO (Un 4)

Torpedo/Destroyer Squadron: SUIREI SENTAI;  
Kansho (Kan 3) (p. 7)

tu: P

## ***U: YU***

u: U

UNDO: Movement; UNDO (Un 4)

## ***V: BUI***

**W: TAFURYU**

wa: K

**X: ETSUKUSU****Y: WAI**

ya: W

yo: M

yu: JINKEI; Undo: (Un 1)

**Z: ZETSUTO**

# Appendix 1 Translations of Captured IJN Tactical Documents

This appendix consists of a number of pages from various translations of captured IJN tactical documents, most of which are illustrative of the ENCODE text.

The first item is a page from a translation of Mobile Fleet Signal Appendix. The first entry is found in the ENCODE section under C: Circular Formation. The translation consists of four column headings which are generally self explanatory:

SIGNAL	TEXT	FORMATION	NOTE
JIN 01 (2) Presumably a short form of JINKEI, a signal pennant used to designate formations.) 2A	Take Circular Formation A	<p>Axis of formation (JIKUJIN)</p>	
JIN 23	Take Circular Formation B	<p>Axis of formation (JIKUJIN)</p>	
JIN 30	Take Circular Formation C	<p>Axis of formation (JIKUJIN)</p>	

(01) 0101-12

11

IN Exact tracings from the original document.)

(Continued on following page)

(Note: In this and the following group of sketches, 1 equals kilometers.)

SIGNAL: JIN is the flag found in the UNDOKUBETSUKI section: Z & A are the International Signal flags found in the MOJIKI section

TEXT: Self explanatory

FORMATION: This is an actual drawing of Formation ZA and is noteworthy since it is a departure from USN practice in that the actual formation is illustrated rather than an example, the USN practice. It is for a seven ship formation with the guide at station 0. Station 1 is 30 degrees to the right of the axis (angle A); 3 at 90 degrees (angle B) and 5 at 150 degrees (angle C). The even numbered stations are a mirror of their odd numbered counterparts. Angles are the same; i.e. A, B, C. The distance(s) from the guide are established by doctrine and will be illustrated below.

Though not in the text the other two signals are easily understood when referring to the ENCODE section.

The second page is also from Mobile Fleet Signal Appendix and illustrates a simultaneous change to a new course by all forces while cruising under alert. It is interesting that the screens reorient but the individual formations within the disposition keep their true bearing relationship. It appears the reorientation is automatic. The signal which is found in the ENCODE text is KAN 330 RETSU BAN: KAN is the Kansho flag for warship. RETSU is an Undo flag, and Ban also an Undo flag. 330 are the Sujiki Special Navy Number flags. The USN rough equivalent is the signal "Turn", and more specifically in this case "330 Turn" since the turn is to the left. There would be a separate signal for the screen reorientation(s) within the individual formations.

This page is again from Mobile Fleet Signal Appendix and illustrates a change of course in which the ships maintain their relative positions. It corresponds roughly with "Corpen". The signal here is KAN HO 30 and is also found in the ENCODE section. KAN is again the same Kansho flag as above; 30 Sujiki and Ho Undo. The US signal would be "Corpen 030".



270/245/otg

## Example 1.

B A	A 20 HO	X KKI (=1) 5
-----	---------	--------------

(TH KKI is presumably the short name of a special signal pennant.)

"Take stations in Order of Cruising Under Alert (KKIKAIKORO) - 1:  
A will be 20°, X will be 5 km."

## Example 2

B B	B 50 HO	Y KKI 6 K
-----	---------	-----------

"Take stations in Order of Cruising Under Alert (KKIKAIKORO) - 2:  
B will be 50°, Y will be 6 nautical miles."

H. In order of cruising under alert (KKIKAIKORO), the leading unit will form a line abreast or a formation based thereon. In order to effect a change of course when there are no ships (units) on the guide ship course in the line of the leading ship (unit), it will be assumed that there are such ships (units), and the movement will be carried out in accordance with Standard Fleet Maneuvers 62 (4).

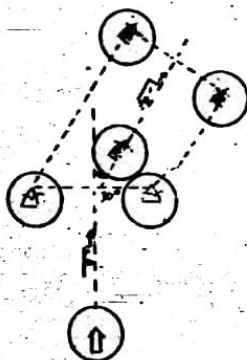
Page  
12/51

## Example

KAN (=8)	HO 30
----------	-------

(TH KAN is presumably the short name of a special signal pennant.)

"Change fleet course to 30°."



(TH Exact tracing from the original document.)

(TH Translation of conventional signs and abbreviations:)

✱	Aircraft carrier
↑	Naval force including capital ships

(01) etc:-

(1) 計

(2) 艦

The next two pages, also from Mobile Fleet Signal Appendix, illustrate an axis rotation and the signal to execute same. Paragraph G at the bottom of the first page shows the signal for rotation of a formation axis: 30 HO BAN. Flag HO is referred to in paragraph 3 above, while flag BAN is referred to in paragraph 2 above. Both are from the Undo section. 30 is Sujiki. The drawing at the top of the next page illustrates execution of the signal. This signal can be found on p. 2 of the ENCODE section. The following paragraph H. discusses use of the Undo flags Red (Aka) and Green/Blue (Ao). The Japanese Kanji "Ao" has two readings: green or blue. The translators chose "blue". Other sources indicate "green" and since the flags refer to port (red) and starboard (green) green seems the logical color.

272/245/etg

"Take Circular Formation B. Axis of formation will be 30°, course 280°."

## Example 2

JIN 20 60 80

"Take Circular Formation C. Axis of formation will be 60°, course — present course."

F. Changes of direction of a circular formation are carried out as follows:

1. The execution of the change is based on the axis of formation (JIKUHOKO). When this differs from the course, the change will generally be made after a simultaneous turn into the axis of formation (JIKUHOKO) has been made. The guide ship for changes in course referred to above is the screening vessel on the axis of formation (JIKUHOKO) passing through the center of the formation. If there is no screening vessel on this line, it is simulated that there is one abreast of the leading ship and this (Point P) is used as guide.

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12/108

2. When changing course with the axis of formation (JIKUHOKO) differing from the course and with the aircraft carrier (if there are two aircraft carriers, with that carrying or designated by the senior commanding officer) acting as guide ship, maneuvers and signals will correspond to Standard Fleet maneuvers 63.

G. Change of the axis of formation (JIKUHOKO) of a circular formation is usually carried out by change of direction and simultaneous turning. However, if necessary, it may be carried out as shown in the following example:

## Example

SO 80 RAN (+1)

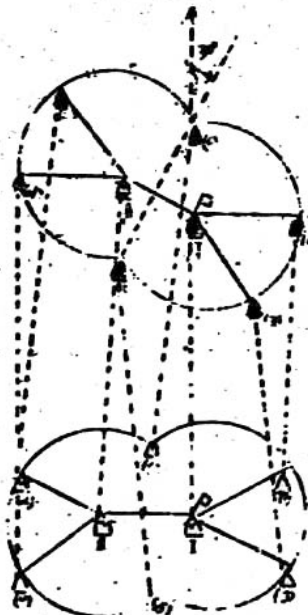
"Change axis of formation (JIKUHOKO) to 30°."

(+1) etc:-

(1) 方番

0044

278/245/etc



(IN Exact tracing from the original document.)

(IN Translation of conventional signs and abbreviations:)

△ Aircraft carrier

P Fleet commander

Page 13/104 H. Urgent simultaneous turning of a circular formation is carried out as follows:


1. When the senior commanding officer is aboard an aircraft carrier

a. The turn is made when the aircraft carrier with the senior commanding officer aboard has hoisted BLUE (RED) and the other aircraft carrier is observed to be hoisting the same signal. (If there is only one aircraft carrier, the turn is made when it hoists the signal).

b. The turn is made when the aircraft carrier that is not carrying the senior commanding officer and a screening vessel hoist the same signal.

c. When all the ships have hoisted the same signal, the aircraft carrier with the senior commanding officer on board takes down the signal when convenient and the other ships follow suit.

## Appendix 2. Signal Flags used by Japanese Naval and Merchant Ships – Research Report 15 June 1945

CONFIDENTIAL	
<b>ALLIED TRANSLATOR AND INTERPRETER SECTION</b> <b>SOUTH WEST PACIFIC AREA</b> <b>RESEARCH REPORT</b>	
171	
<b>SUBJECT:</b>	SIGNAL FLAGS USED BY JAPANESE NAVAL AND MERCHANT SHIPS
	I.G. No. 7540 B.I.D. No. N-2607
<b>DATE OF ISSUE</b>	15 June 1945
	No. 96
<b>SUMMARY:</b>	<p>1. This report sets forth all information available to ATIS files up to 1 January 1945, pertaining to signal flags used by Japanese naval and merchant vessels which appear to be unusual, or to irregular combinations of flags with other emblems.</p> <p>2. Much of the information on record at ATIS pertains to International Code Flags, and in particular those to which a special meaning has been allocated by the Japanese. This information has been omitted as it is not relevant to the terms of the inquiry.</p>
GC/HAAC/12/45 Distribution H	 SIDNEY F. MASHEIR COLONEL S.C. COORDINATOR
<b>SOURCES:</b>	Captured Documents
(INFORMATION SHOULD BE ASSESSED ACCORDINGLY)	
1	
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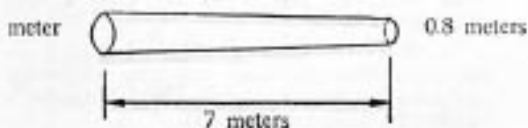
## Section I. JAPANESE FLAG SIGNALS

### 1. RECOGNITION BY EMBLEMS

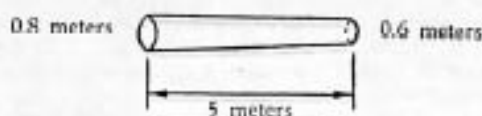
Extracts from a copy of the Wartime Recognition Regulations published by the Japanese Navy Ministry, 20 January 1944, with revisions to 1 February 1944, gives the following data:

#### a. Sleeves

(1) Sketches of sleeves used by Japanese Navy showing sizes used by various warships.  
"For use by warships above destroyers:



"For use by destroyers and below:



(2) "About half the size of the sleeve used by destroyers—for small vessels and boats.

#### b. National Flag

(1) "When used in combination with the sleeve:  
Size 4—width for warships above destroyers.  
Size 2—for use of destroyers and below, small vessels and boats.

#### c. Ensigns and National Flags

- (1) "Optional within the said ships allotment.
- (2) "Methods of displaying emblems.

Emblem

- (a) 1 sleeve
- (b) 1 sleeve, 1 national flag
- (c) 1 national flag, 1 sleeve
- (d) 1 national flag, 1 sleeve, 1 national flag

Where Hoisted

Both sides of foremast upper yard arm.

Small vessels and boats may fly emblems on one side only if desired.

- (3) "Time limits for use of sleeves and flags:  
"Flown from 45 minutes after sunset to 30 minutes before sunrise when at sea, but, if circumstances justify, the emblems may be left down for a time, in which case they must be ready for hoisting whenever needed."

(CINCPAC-CINCPAC Translation, Item No. 10101 (A, B and C), pages 20-22, 39)

### 2. CODE SIGNAL FLAGS FOR JAPANESE SYLLABARY

Sheet of Japanese signal flags showing colors and meanings (Owner and unit not known, but

the designs, colors and meaning attributed thereto suggest that they are for use by boat units) is included as Appendix A.

(ATIS Bulletin No. 631, page 3)

### 3. SEMAPHORE SIGNALS

a. Extracts from a diary, owner and unit unknown, captured at Rekata Bay, Santa Isabel Island, Under date of 2 June 1943, the following entry appeared:

"When Semaphore signals are used during daytime the following rules apply:

When calling naval vessels

Hoist W and a numerical flag

When calling a fortress

Hoist J and a numerical flag

When calling a battery

Hoist X and a numerical flag

When calling an Army transport

Hoist N and a numerical flag."

(SOPAC Translation, Item 1079)

### 4. SPEED CONES AS SIGNALS

a. Nine sketches showing use of speed cones and the meaning of signals utilizing same from the notebook of naval rating of Kure Naval Barracks:

Speed Cones

Slow Speed



Half Speed



Normal Speed



High Speed



1 Combat Speed



2 Combat Speed



## SIGNAL FLAGS USED BY JAPANESE NAVAL AND MERCHANT SHIPS

## 3 Combat Speed



## 4 Combat Speed

5 Combat Speed  
(Full Speed)

(ATIS Bulletin No. 957, page 3)

5. SIGNALS IDENTIFYING VESSELS  
IN WAKASA BAY

a. Signals for identification of vessels in Wakasa Bay Defense Sector (eastern coast of Japan) are given in letter from Maizuru Naval District to all subordinate districts, dated 14 May 1943:

"Ships which sight the following signals will withdraw immediately into the nearest harbor:

(1) "Daytime:



"When the 'V' flag is flying at the NAYO (35° 35' N, 135° 27' E), the NII (35° 42' N, 135° 19' E), the BAKUCHI (35° 33' N, 135° 21' E) or the KYO-GA-MISAKI (35° 47' N, 135° 14' E) look-out stations, or on naval ships.

(2) "Night time:

(a) "Green-green-white lights in that order from top to bottom vertically shown from places where daytime signals are shown.

(b) "Code signal 'V' sent repeatedly by blinker lamps.

(c) "2 green star signals (flares) are fired.

"Ships observing these signals will inform other ships which they meet, and withdraw immediately."

(JICPOA Translation, Item No. 6084, page 1)

6. EXTRACTS FROM SIGNALLING  
TEXT BOOK

a. Extracts from a bound printed manual entitled "Signalling Text Book" dated September 1939, issued by 11 Combined Air Unit (Naval Air Unit):

(1) "Chapter IV.—Various Signals based on Navy Department Orders.

"1. Signals used during speed trials of Naval Vessels. (Navy Department Order No. 12, 19 October 1935).

"Naval vessels that are steaming with A flag hoisted under the code flag on the masthead or

yardarms are undergoing speed trials, and all ships must take precautions not to come near them.

"2. Signals of submarines engaged in cruising submerged. (Navy Department Order No. 4, 10 April 1924).

"a. In order to indicate its position to other surface craft, submarines navigating submerged in home waters and their vicinity will hoist a red square marker made of sailcloth or metal from the periscope or temporary mast.

"b. When a naval vessel accompanies the submarine while the latter is cruising submerged, the said ship will hoist two B flags from its masthead or cross beams, thus indicating that submarines are operating within a radius of five miles. When it is necessary, the locations of the submarines are indicated by international signals, using the ship as the base point.

"3. Signal hoisting regulations when Imperial Navy ships are engaged in airplane operations, mine sweeping, towing, or surveying. (Navy Department Order No. 20, 7 December 1926).

"a. Ships, while flying off or taking on airplanes, will hoist a streamer in a place where it can be easily seen during the day. (It is dangerous to approach within 1,000 meters).

"b. Ships doing mine sweeping during the day will hoist a black globe with a diameter of two feet where it can be easily seen. At night, when two or more ships are working, a series of three lights will be set,—white, white, red, with an interval of four feet between the series, so that it can be seen from a distance of two nautical miles. (It is dangerous to approach within 500 meters).

"c. When naval vessels are towing firing targets for the naval ships or winding the towing rope, a series of three black globes, two feet in diameter, are hoisted. An interval of six feet is set between the series so that it can be easily seen in daylight. (It is dangerous to pass over the towing rope).

"d. Ships, which in survey operations are anchored or navigating on a set course, will hoist a series of 'H' flags with an interval of six feet under the black globe, diameter two feet, where it can easily be seen in daylight.

(2) "Chapter VI.—Various signals used in the Inland Sea (Inland Navigation Regulations Extract).

Gives various flags used, methods of use and designation of flag signals. Included as Appendix B.

(ATIS Bulletin No. 1461, page 12. Translations of extracts from Document No. 14495, not published elsewhere)

7. METEOROLOGICAL AND OTHER  
FLAGS

a. Various flags, emblems and lights used for passing meteorological data, flags flown by Navy and Army transports, and various ensigns. Included as Appendix C.

(Undated Japanese Flag Chart received from Advanced Land Headquarters)

## Section II. CONCLUSIONS

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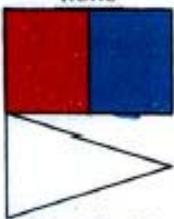
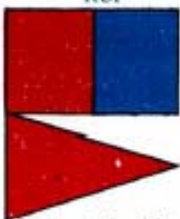










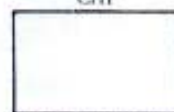









1. Available evidence does not indicate that the Japanese have introduced any radical departures in colors and methods of usage.

2. Signal Flags for small craft and their formations are restricted to very few types. Variety of signals is obtained by flag combinations.




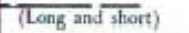







3. It would appear possible that the use of special signals for various localities are in force according to the discretion of the commanding officer of the locality concerned, and, in the case of boat detachments to the discretion of the officer under whom such detachments operate.



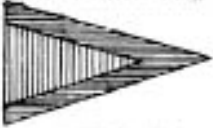





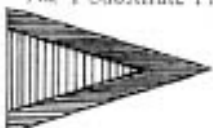

## Appendix A. CODE FLAGS REPRESENTING THE JAPANESE SYLLABARY

<p><b>RURO</b></p>  <p>Incline to the left</p>	<p><b>RUI</b></p>  <p>Incline to the right</p>	<p><b>OWA</b></p>  <p>Centre</p>
<p><b>RI</b></p>  <p>Cease covering fire</p>	<p><b>TO</b></p>  <p>Commence covering fire</p>	<p><b>HE</b></p>  <p>Understood</p>
<p><b>O</b></p>  <p>Enemy flank fire</p>	<p><b>HANI</b></p>  <p>Request supporting fire</p>	<p><b>IRO</b></p>  <p>Require assistance</p>
<p><b>ONI</b></p>  <p>Advance</p>	<p><b>NURI</b></p>  <p>Shallow sea mines</p>	<p><b>RU</b></p>  <p>Obstacles</p>
<p><b>CHI</b></p>  <p>Spread smoke screen</p>	<p><b>NU</b></p>  <p>Assemble</p>	
<p><b>WA</b></p>  <p>Obstacles (No. 304)</p>		
<p><b>KA</b></p>  <p>Enemy flank fire</p>		
<p><b>YO</b></p>  <p>Shallow sea mines</p>		
		<p><b>1</b></p>  <p>10, 100, 1000 meters</p> <p><b>RO</b></p>  <p>20, 200, 2000 meters</p> <p><b>HA</b></p>  <p>30, 300 meters</p> <p><b>NI</b></p>  <p>40, 400 meters</p> <p><b>HO</b></p>  <p>50, 500 meters</p>

Appendix B. VARIOUS SIGNALS USED IN THE INLAND SEA

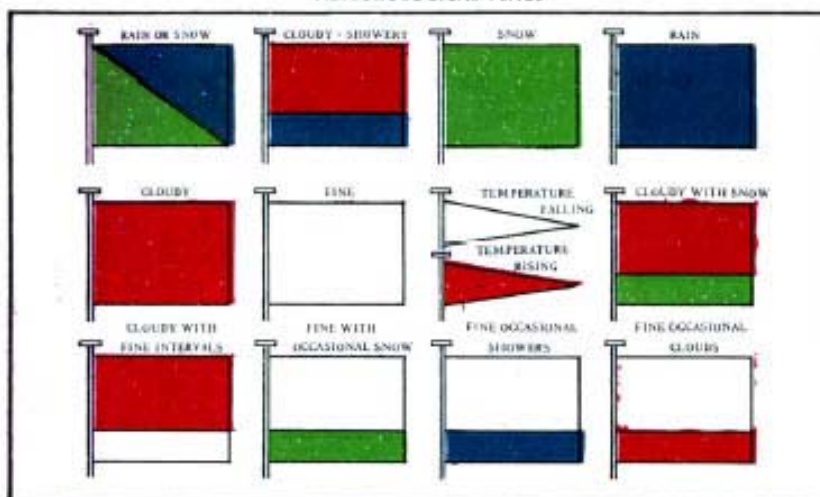
Signals	Purpose	
 (one black globe)	1. When unable to maneuver freely. 2. When rescuing persons or giving assistance to ships. 3. When engaging in laying under water cables, telephones or route markers. 4. When engaging in water route survey or dredging. 5. Anchoring in Shimonoseki Strait in order to turn the bow of the ship.	It is hoisted where it can be easily seen.
 (one red light)	Anchoring in Shimonoseki Strait in order to turn the bow of the ship.	This light will be hoisted in addition to the lights prescribed by prevention of collision at sea regulations.
 (Red Flag)	When engaging in clearing up debris, salvaging sunken materials or other duties with the approval of the officials of the jurisdiction.	It is hoisted where it can be easily seen.
 (Long and short)	Ships overtaking starboard of other ships.	By sirens.
 (Long and short)	Ships overtaking starboard (sic) of other ships.	By sirens.
 (Long and short)	Ships using the middle channel of Kurushima Strait at change of tides.	By sirens.
 (Long and short)	Ships using the middle channel of Kurushima Strait at change of tides.	From the time of coming abreast of Ichinose Pt or Ryujin Island to passing through the channel, it will be sounded several times.
No. 1 Substitute Flag   C Flag (Day) (Night)	Ships passing the middle or east channels of Kurushima Strait.	It is hoisted when passing abreast of Nakawatar Island and between Imabari breakwater and lighthouse.
No. 1 Substitute Flag   E Flag	Ships departing from Moji, Shimonoseki and Hamamatsu Harbors, and navigating through the eastern entrance of Shimonoseki Strait.	Hoist until entering Shimonoseki Strait Route Line.

## VARIOUS SIGNALS USED IN THE INLAND SEA

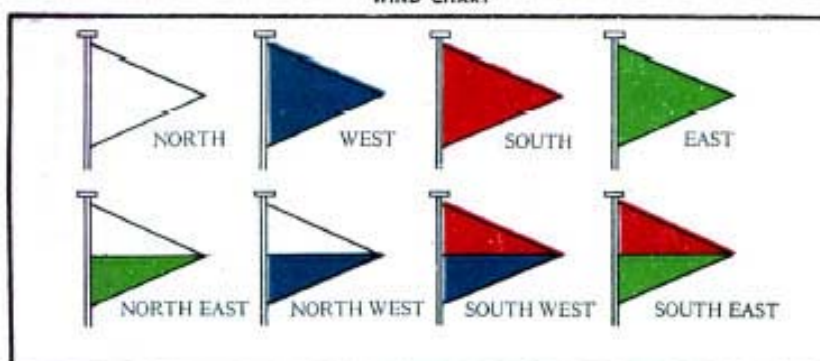
Signals	Purpose	
<p>No. 1 Substitute Flag</p>  <p>'W' Flag</p> 	<p>Ships departing from Moji, Shimonosaki, and Hamamatsu Harbors and navigating through the western entrance of Shimonosaki Strait.</p>	<p>Hoist until entering Shimonosaki Strait Route Line.</p>
<p>No. 1 Substitute Flag</p>  <p>'M' Flag</p> 	<p>Ships arriving at Moji, Shimonosaki, Hamamatsu Harbors and ships not raising the designated anchorage signals between Maeda River mouth and Santei Point.</p>	<p>Between Maeda River and Santei Point.</p>
<p>No. 1 Substitute Flag</p>  <p>'S' Flag</p> 	<p>Ships entering Shimonosaki Harbor.</p>	<p>Between Maeda River and Santei Point.</p>
<p>No. 1 Substitute Flag</p>  <p>'V' Flag</p> 	<p>Ships entering Hamamatsu Harbor.</p>	<p>Between Santei Point and Daijo Point.</p>

## Appendix C. FLAGS, ENSIGNS, METEOROLOGICAL FLAGS AND SIGNALS

## METEOROLOGICAL FLAGS



## WIND CHART



## DAYLIGHT STORM WARNINGS



## NIGHT STORM WARNINGS



## Appendix 3. Notes on Other Forms of Signaling and Japanese Writing

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The focus of this paper is on flag signaling however it is appropriate to examine the other forms of communication used by the IJN. Briefly they used all the available forms in use by major navies of the period. Some of these had to be adapted to Japanese writing. Kana was the form used in all of their visual and Morse code. Of course the standard English version of Morse had to be modified to fit the kana.

Semaphore: The Japanese forms for semaphore signaling by necessity took on a different form from the English. Their semaphore used the Kana.

Wireless and flashing light (directional signal search lights and yardarm/masthead blinkers): As with Semaphore the Japanese Morse Code was adapted to the kana. The illustration “Japanese Morse” has three columns. The first column is the Roman letter and Arabic numeral for reference to letter/number signal book type signals. Note that the Encode section has the Japanese phonetic alphabet for the Roman letter signals: i.e. A=Gozen; B=Aka, etc. The second column is the Kana for each Morse signal and the third column is the Morse code. Top to bottom, left to right the characters are: First Group: HE, MU, Diacritic, I, TA, YO, RA, U, NA, SE, HO, WA, RI, RE

Second Group: NU, KU, TE, NO, KA, RO, TU (TSU), O, HA, MA, NI, KE, HU(FU), KO

Third Group: TO, MI, Diacritic, O, IH or YI\*, SO, TE, EH or YE\*, -, SE,

Fourth Group: ME, MO, YU, KI, SA, RU, E, HI, SI (SHI), A, SU

\*Archaic kana, no longer in use

Shapes and light arrays: There were speed cones and rudder angle indicator shapes as well as a matching mix of light arrays for night use. Running lights followed the standard international practice.

Fleet Broadcasts: The Japanese Navy’s Fleet Broadcast system is described in some detail in Japanese Monograph 118, Operational History of Naval Communications, December 1941-August 1945. This volume is a fairly comprehensive overview of Japanese Naval Radio Communications.

Notes on Japanese writing: Japanese writing takes on two forms:

The Kanji uses Chinese characters and gives them both phonetic and conceptual values. It is not useful in signaling since there are over 1800 characters in the basic Kanji and nearly 1000 more in common use.

The Kana is a phonetic syllabary similar in concept to western alphabets. There are 50 basic Kana, 25 variants and 30 odd combinations. The variants are of the same “family” of sounds; i.e. ka and ga, sa and za, da and ta and lastly ha, ba and pa. To form the variants a diacritical is added. In the case of the first three examples “ is used. In the case of ha and ba “is also used. To form pa a small o is used to modify ha instead of the “. When signaling by Morse or

semaphore the diacritical is added after the basic character so, for example, ha becomes ba by adding the diacritical “b”. The Kana is arranged in two fashions. The first and more familiar to westerners is a grid format with the vowels across the top and consonant vowel combinations beneath their respective vowel thus:

A	I	U	E	O
HA	HI	HU(FU)	HE	HO
KA	KI	KU	KE	KO
MA	MI	MU	ME	MO
NA	NI	NU	NE	NO
RA	RI	RU	RE	RO
SA	SI	SU	SE	SO
TA	TI(CHI)	TU(TSU)	TE	TO
WA	WI		WE	WO
YA	YI	YU	YE	YO
N				

G combinations are K combinations plus “g”

Z combinations are S combinations plus “z”

D combinations are T combinations plus “d”

B combinations are H combinations plus “b”

P combinations are H combinations plus “p”

GA	GI	GU	GE	GO
ZA	ZI(JI)	ZU	ZE	ZO
DA	DI(JI)	DU(ZU)	DE	DO
BA	BI	BU	BE	BU
PA	PI	PU	PE	PU

The combinations are essentially a way of forming diphthongs such as SYO (SHO).

HYA=HI+YA HYO=HI+YO HYU=HI+YU  
 KYA=KI+YA KYO=KI+YO KYU=KI+YU  
 MYA=MI+YA MYO=MI+YO MYU=MI+YU  
 NYA=NI+YA NYO=NI+YO NYU=NI+YU  
 RYA=RI+YA RYO=RI+YO RYU=RI+YU  
 SYA=SI+YA SYO=SI+YO SYU=SI+YU  
 TYA=TI+YA TYO=TI+YO TYU=TI+YU

The other format is called the I-RO-HA which is a children’s poem with all of the Kana as an easy method of learning them.

The Japanese phonetic “alphabet”:

A=Gozen; B=Aka; C=Shisu; D=Teshiki; E=Isuto; F=Efu; G=Shairo; H=Tokaso; I=Takuten;  
J=?; K=Wa; L=Eru; M=?; N=Kiroren; O=Oba; P=Tsu; Q=Kina; R=Aru; S=Kigan; T=Tebu;  
U=Yu; V=Bui; W=Tafuryu; X=Etsukusu; Y=Wai; Z=Zetsuto

One other comment, there are several ways to write Japanese words using the Roman alphabet. These are called Romaji. The first method which was used during World War II is the Kun-Rei-Shiki which is shown above. The other popular one and the one in use today is the Hepburn method (Hepbon Shiki). The parenthetical notes show the Hepburn rendering and more closely follows pronunciation. Kun-rei is the official format. Pronunciation is also problematical. Bear in mind that the use of the Roman alphabet contemplates it will be used in all languages which use that alphabet. Oversimplified this has been taken to mean that consonants are pronounced as in English, but vowels as in Italian, that is to say A=Ah; E=Ay, I=Eee; O=Oh; U=Ew.

## Appendix 4. A Signals Primer

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### Definitions:

“at the dip”: the flag hoist has been raised about  $\frac{3}{4}$  of the way up.

“closed up”: the flag hoist has been raised as high as it will go.

“flag”: a bunting which is usually, but not always rectangular and attached at one edge to a staff or halyard. The part nearest the staff is called the hoist, the outer part the fly. The length, is also referred to as the fly.

“halyard”: a line that hoists a sail or flag and keeps it up. Also “halliard”.

“hailed down”: the flag hoist has been lowered to the deck.

“pennant”: a small flag, often triangular or tapered with a blunt end. Also “pendant”.

“relaying”: at times it is impossible for all ships in a formation to see the guide. In those cases the ship nearest the guide will relay the signal to those ships further from the guide, by displaying the same signal as the guide. It will not hoist the signal close up until the further ship(s) have done so.

“two blocked”: see “closed up”. The halyard is run through a “block” (pulley). In sailing parlance when two lines are hauled in as tight as possible the blocks on the two sections of line are touching; i.e. “two blocked”. Though technically not the same, this usage was carried over to signaling.

“yard”: a spar that crosses a mast. Signal halyard blocks are attached to the signal yards. When needed the signal may be hoisted from both the port and starboard yards. Large ships may have two masts and two sets of signal yards. Typically the foremast yard is used since it is nearest the bridge. The main mast yard would be used if the bridge or signal bridge was disabled and command of the ship moved aft.

Signals are read top to bottom; outboard to inboard.

### Flag sets.

The flags and pennants of the International Code of Signals (ICS) are the core of most signal flag sets. It consists of three sub sets and one special pennant: ICS Letter Flags (A-Z); ICS Substitute Pennants (1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Substitutes), ICS Numeral Pennants (0-9) and the Answering Pennant. The flags can be used to spell out words, but the normal use is in one, two or three letter/number combinations whose meaning can be found in the ICS or a navy signal book. The meaning in the ICS and a navy signal book are not the same! Warships use the former when communicating with merchant ships and the latter when communicating with other warships of their navy or allied navies.

Because of the special needs of navies through the years special navy flags and pennants have been adopted by various navies. Typical usage would be flags for maneuver of or in assuming formation(s). Navies also have their own set of numeral flags or pennants in addition to the ICS Numeral Pennants. These are used in communicating course, speed, distance and other numbers.



The substitute pennants have a special purpose. Because of the limits on the number of flags or pennants in a ship's inventory a need arose to cover repeat letters or numbers in a signal flag hoist. Assume a ship has one set of flags and the hoist is "AA". The flags would be "A 1<sup>st</sup> substitute", thus the substitute pennant takes the place of "A". If the hoist was "ABB" the flags would be "AB 2<sup>nd</sup> substitute", etc. Since navy signals often are quite long the USN adopted a 4<sup>th</sup> substitute in its own inventory. The IJN did not expand its set and, in fact, incorporated the substitutes into a separate subset of special navy flags. The Answering Pennant is hoisted to indicate the addressee has seen the signal and is going to answer it.

By World War II the USN and IJN had adopted the ICS for its core flag inventory and each navy had adopted its own special navy signal flag set.

#### Equipment:

The signal bridge of a warship will have assorted equipment to serve the ship's visual signaling needs. In addition to the signal flags and their associated equipment there are signal searchlights, stands for semaphore signaling, and a hut for storing signal books and the like, among other items. We are only interested in the signal flags and their associated equipment.

The signal bridge is adjacent to the mast from which the signals will be displayed. It is usually adjacent to the ship's bridge. The signal yards are near the top of the mast and typically have 3-6 halyards to a side. At the base of the mast are the signal flag lockers or "bags" (USN term, though technically not bags at all) which contain two or more of each flag. The flags themselves have a rope sewn to the hoist. At the top and bottom are fasteners of types that vary from navy to navy. The IJN chose the Englefield signal halyard clip (aka Brummel hooks). Go to: <http://www.glen-l.com/webletter/webletters-2/webltr18a.html> for a picture of the clip and its "operation". The USN uses a combination of a shackle at the top and a ring at the bottom of the hoist rope. The advantage of the Englefield is it has no moving parts. The top fastener is right close to the flag while the bottom one is about half the length of the hoist down. This gives the flags room to fly and be seen. From time to time a spacer the approximate length of the line on the hoist of a flag is attached to a signal as a break in the coded groups. In the USN this is referred to as a "tack line". If you see a text that says "Formation/One/tack/Speed/One/Five" the signal would have the following items: Formation pennant/Special Navy Numeral Flag One/spacer/Speed pennant/Special Navy Flags One and Five.

#### Making, Reading and Executing Flaghoist Signals:

When a commander of a formation decides to make a signal for a course change and wants the signal to be by flag he will advise the appropriate signals officer "signal course change to 090" (the formation is presently on course 000). Additional information such as the change will be by simultaneous turning (thus maintaining true position) or by following in the wake of the ship next ahead (thus maintaining relative position). The signals officer will then refer to the Signal Book and find the entry for the maneuver, in this case "Turn/0/9/0" or in the IJN "RETSU/BAN/0/9/0"(See the Encode chapter p. 3) and advise the signalmen to make that signal. They attach the flags to the outboard halyard and hoist it close up. As ships in the formation see the signal they attach the flags to their halyard and hoist it at the dip while the signals staff look to the signal book under the entry "Turn---(the number will vary for obvious reasons)" or "RETSU/BAN" and find "Simultaneous turn (to the course indicated by the

Special Navy Numeral Flags)” in both cases. When this information is communicated to the bridge and understood the flag is then hoisted close up. When all ships have acknowledged receiving the signal and understanding its meaning the flagship may execute the signal by hauling the signal down.

Sources:

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Materials transcribed at the Japanese Defense Forces War History Library Room (Boei-cho Senshi Shitsu Toshokan) by Mr. Maejima Hajime in the early 1980s. It was provided to me by Mutsuo Uchiyama..