

AMERICAN EMBASSY,  
NAVAL ATTACHÉ  
TOKYO.

6th February 1908.

(37)

Sir :

I have the honor to acknowledge the receipt of data received this day concerning eight vessels of the Japanese Navy, and I take this opportunity to thank the Department, and especially you, for the extreme favor shown me in furnishing this information.

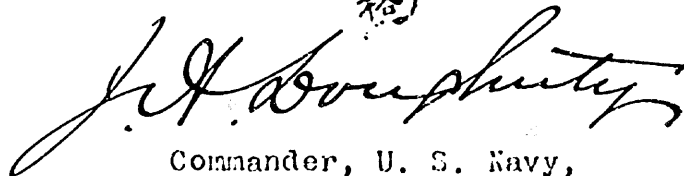
I desire again to assure the Admiralty that any information of confidential nature furnished me will be kept strictly confidential, and whenever any matter received from the Admiralty is marked "Confidential" the American Navy Department's attention will be especially called to the fact, and I am sure will be strictly observed by them.

Deeply appreciating the confidence entrusted in me,

I have the honor to be, Sir,

Very respectfully

村松



Commander, U. S. Navy,

Naval Attache.

Captain M. Murakami, I. J. Navy,

A. D. C. to the Minister of Marine,

Navy Department, Tokyo.

0537

Copy. Confidential.

Imperial Japanese Navy Department.

Tokio February 6th 1908.

Sir;

With reference to your request of November 21st. last, concerning the data of the Satsuma, Aki, Ikoma, Ibuki, Kurama, Mogami, Yodo, and Tone, I have herewith much pleasure to forward you the attached forms filled out with data of all of the above-mentioned vessels, and I beg to inform you that as to those lines which have not been filled, I regret we are not in a position to answer and that almost all the details on the accompanying sheets are not made known to public, therefore, I hope you will bear in mind that they will surely be kept as a confidential matter in your Navy.

Begging your pardon for my not answering you before.

I have the honor to be,

Sir,

Your obedient servant,

(Signed). K. Murakami.

A.D.C. to Minister of Marine.

Commander J.A. Dormer, U.S.N.

Naval Attaché to

American Embassy.

11  
12  
7

\* A K I \*

Arc of train of torpedo tubes,

Number of water tight compartments.....

I.H.P. ....

Number of boilers .....

Area of grate surface .....

Kind of armor,-

Number of range finders .....

Location of same .....

Fire control system,-

0539

"Tone"

Name .....  
 Class .....  
 Displacement in tons, full load .....  
 Length over all .....  
 Length between perpendiculars .....  
 Breadth, extreme .....  
 Coal Capacity, normal .....  
 Corresponding draft of water .....  
 Coal capacity, full .....  
 Corresponding draft of water .....

Steaming radius,		
Economical speed with normal coal ....		Knots.
"                    "          full      "      ....		Knots.
Steaming radius,		
Full speed with normal coal .....		Knots.
"                    "          full      "      .....		Knots.

Engines, -description of -

I.H.P. ....	Speed with I.H.P. ...	Knots.
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Boilers, Number and kind-

Area of grate surface .....

Armor, kind -

Thickness of belt amidships ...	
Tapering to .....	at ends.
Upper belt .....	

Height of armor above W.L. ....	
Below water line .....	

Conning tower .....	thick.
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Turrets (large) .....	thick.
Height above water line .....	

Turrets (secondary) .....	Thick.
Height above water line .....	

Casemates .....	thick.
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Protective deck .....	thick.
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Number of water tight compartments .

Full load draft,
Aft .....
Main .....



"I Komor"

Name .....  
 Class .....  
 Displacement in tons, full load .....  
 Length over all .....  
 Length between perpendiculars .....  
 Breadth, extreme .....  
 Coal Capacity, normal .....  
 Corresponding draft of water .....  
 Coal capacity, full .....  
 Corresponding draft of water .....

Steaming radius,  
 Economical speed with normal coal .... Knots.  
 " " full " .... Knots.  
 Steaming radius,  
 Full speed with normal coal ..... Knots.  
 " " full " ..... Knots.

Engines, -description of -

I.H.P. .... Speed with I.H.P. ... Knots.

Boilers, Number and kind-

Area of grate surface .....

Armor, kind -

Thickness of belt amidships ...  
 Tapering to ..... at ends.  
 Upper belt .....

Height of armor above W.L. ....  
 Below water line .....

Conning tower ..... thick.

Turrets (large) ..... thick.  
 Height above water line .....

Turrets (secondary) ..... *Thick*  
 Height above water line .....

Casemates ..... thick.

Protective deck ..... thick.

Number of water tight compartments .

Full load draft,  
 Aft .....  
 Main .....

Armament,  
   Main battery .....  
   Intermediate battery .....  
   Secondary battery .....  
   Field guns .....  
   Machine guns .....  
   Torpedo tubes, size .....  
     Above water .....                   Arc of train ..  
     Submerged .....                   Arc of train ..  
  
 Arc of fire,  
   Main battery .....  
     (forward .....  
   Intermediate battery (middle, port .....  
     (middle, starboard ...  
     (aft .....  
   Secondary battery .....  
  
 Boats,-  
  
   Complement of officers .....  
   Crew all told .....  
   Number of masts .....  
   Number searchlights .....  
     Location,  
  
   Number of range finders .....  
     Location,  
  
   Number of funnels .....  
  
   Fire control system,-

"Yodo"

Name .....  
 Class .....  
 Displacement in tons, full load .....  
 Length over all .....  
 Length between perpendiculars .....  
 Breadth, extreme .....  
 Coal Capacity, normal .....  
 Corresponding draft of water .....  
 Coal capacity, full .....  
 Corresponding draft of water .....

Steaming radius,  
 Economical speed with normal coal .... Knots.  
 " " full " .... Knots.  
 Steaming radius,  
 Full speed with normal coal ..... Knots.  
 " " full " ..... Knots.

Engines, -description of -

I.H.P. .... Speed with I.H.P. ... Knots.

Boilers, Number and kind-

Area of grate surface .....

Armor, kind -

Thickness of belt amidships ...  
 Tapering to ..... at ends.  
 Upper belt .....

Height of armor above W.L.....  
 Below water line .....

Conning tower ..... thick.

Turrets (large) ..... thick.  
 Height above water line .....

Turrets (secondary) ..... Thick  
 Height above water line .....

Casemates ..... thick.

Protective deck ..... thick.

Number of water tight compartments .

Full load draft,  
 Aft .....  
 Main .....



Armament,

Main battery .....

Intermediate battery .....

Secondary battery .....

Field guns .....

Machine guns .....

Torpedo tubes, size .....

Above water .....

Submerged .....

Arc of train ..

Arc of train ..

Arc of fire,

Main battery .....

(forward .....

Intermediate battery (middle, port .....

(middle, starboard ...

(aft .....

Secondary battery .....

Boats,-

Complement of officers .....

Crew all told .....

Number of masts .....

Number searchlights .....

Location,

Number of range finders .....

Location,

Number of funnels .....

Fire control system,-

Name .....  
 Class .....  
 Displacement in tons, full load .....  
 Length over all .....  
 Length between perpendiculars .....  
 Breadth, extreme .....  
 Coal capacity, normal .....

"Mogami"

Corresponding draft of water .....  
 Coal capacity, full .....  
 Corresponding draft of water .....

Steaming radius,  
 Economical speed with normal coal .... Knots.  
 " " full " .... Knots.  
 Steaming radius,  
 Full speed with normal coal ..... Knots.  
 " " full " ..... Knots.

Engines, -description of -

I.H.P. .... Speed with I.H.P. ... Knots.

Boilers, Number and kind -

Area of grate surface .....

Armor, kind -

Thickness of belt amidships .....  
 Tapering to ..... at ends.  
 Upper belt .....

Height of armor above W.L. ....  
 Below water line .....

Conning tower ..... thick.

Turrets (large) ..... thick.  
 Height above water line .....

Turrets (secondary) ..... thick.  
 Height above water line .....

Casemates ..... thick.

Protective deck ..... thick.

Number of water tight compartments .

Full load draft,  
 Aft .....  
 Main .....

Armament,

- Main battery .....
- Intermediate battery .....
- Secondary battery .....
- Field guns .....
- Machine guns .....
- Torpedo tubes, size .....
- Above water .....
- Submerged .....

Arc of train ..  
Arc of train ..

Arc of fire,

- Main battery .....
- {forward .....
- Intermediate battery {middle, port .....
- {middle, starboard ..
- {aft .....
- Secondary battery .....

Boats,-

- Complement of officers .....
- Crew all told .....
- Number of masts .....
- Number searchlights .....
- Location,
- Number of range finders .....
- location,
- Number of funnels .....
- Fire control system,-

Name .....  
 Class .....  
 Displacement in tons, full load .....  
 Length over all .....  
 Length between perpendiculars .....  
 Breadth, extreme .....  
 Coal capacity, normal .....

"Kurama"

Corresponding draft of water .....  
 Coal capacity, full .....  
 Corresponding draft of water .....

Steaming radius,  
 Economical speed with normal coal .... Knots.  
 " " full " .... Knots.  
 Steaming radius,  
 Full speed with normal coal ..... Knots.  
 " " full " ..... Knots.

Engines, -description of -

I.H.P. .... Speed with I.H.P. ... Knots.

Boilers, Number and kind -

Area of grate surface .....

Armor, kind -

Thickness of belt amidships .....  
 Tapering to ..... at ends.  
 Upper belt .....

Height of armor above W.L. ....  
 Below water line .....

Conning tower ..... thick.

Turrets (large) ..... thick.  
 Height above water line .....

Turrets (secondary) ..... thick.  
 Height above water line .....

Casemates ..... thick.

Protective deck ..... thick.

Number of water tight compartments .

Full load draft,  
 Aft .....  
 Main .....

Armament,

Main battery .....

Intermediate battery .....

Secondary battery .....

Field guns .....

Machine guns .....

Torpedo tubes, size .....

Above water .....

Submerged .....

Arc of train ..

Arc of train ..

Arc of fire,

Main battery .....

(forward .....

Intermediate battery (middle, port .....

(middle, starboard ..

(aft .....

Secondary battery .....

Boats,-

Complement of officers .....

Crew all told .....

Number of masts .....

Number searchlights .....

Location,

Number of range finders .....

location,

Number of funnels .....

Fire control system,-

"Ibuki"

Name .....  
Class .....  
Displacement in tons, full load .....  
Length over all .....  
Length between perpendiculars .....  
Breadth, extreme .....  
Coal capacity, normal .....

Corresponding draft of water .....  
Coal capacity, full .....  
Corresponding draft of water .....

Steaming radius,  
Economic speed with normal coal .... Knots.  
" " full " .... Knots.

Steaming radius,  
Full speed with normal coal ..... Knots.  
" " full " ..... Knots.

Engines, -description of -

I.H.P. .... Speed with I.H.P. ... Knots.

Boilers, Number and kind -

Area of grate surface .....

Armor, kind -

Thickness of belt amidships .....  
Tapering to ..... at ends.  
Upper belt .....

Height of armor above W.L. ....  
Below water line .....

Conning tower ..... thick.

Turrets (large) ..... thick.  
Height above water line .....

Turrets (secondary) ..... thick.  
Height above water line .....

Casemates ..... thick.

Protective deck ..... thick.

Number of water tight compartments .

Full load draft,  
Aft .....  
Main .....

Armament,

Main battery .....

Intermediate battery .....

Secondary battery .....

Field guns .....

Machine guns .....

Torpedo tubes, size .....

    Above water .....

    Submerged .....

Arc of train ..

Arc of train ..

Arc of fire,

Main battery .....

    (forward .....

Intermediate battery (middle, port .....

    (middle, starboard ..

    (aft .....

Secondary battery .....

Boats,-

Complement of officers .....

Crew all told .....

Number of masts .....

Number searchlights .....

    Location,

Number of range finders .....

    location,

Number of funnels .....

Fire control system,-

"Satsuma"

Name .....  
Class .....  
Displacement in tons, full load .....  
Length over all .....  
Length between perpendiculars .....  
Breadth, extreme .....  
Coal capacity, normal .....  
Corresponding draft of water .....  
Coal capacity, full .....  
Corresponding draft of water .....

Steaming radius,  
Economical speed with normal coal ..... knots.  
" " full " ..... knots.

Steaming radius,  
Full speed with normal coal ..... knots.  
" " full " ..... knots.

Engines, - description of -

I.H.P. .... Speed with I.H.P. .... knots.

Boilers, Number and kind, -

Area of grate surface .....

Armor, kind -

Thickness of belt amidships .....  
Tapering to ..... at ends.  
Upper deck belt

Height of armor above W.L. ....  
Below water line .....

Conning tower ..... thick.

Turrets (large) ..... thick.  
Height above water line ..... thick..

Turrets (secondary ) ..... thick.  
Height above water line .....

Casemates ..... thick.

Protective deck. .... thick.

Number of water tight compartments .....

Full load draft,  
Aft.....  
Main .....





Copy. Confidential.

Imperial Japanese Navy Department.

Tokio February 6th 1908

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Sir;

With reference to your request of November 21st. last, concerning the date of the Satsuma, Aki, Ikoma, Ibuki, Kurama, Mogami, Yodo, and Tone, I have herewith much pleasure to forward you the attached forms filled out with data of all of the above-mentioned vessels, and I beg to inform you that as to those lines which have not been filled, I regret we are not in a position to answer and that almost all the details on the accompanying sheets are not made known to public, therefore, I hope you will bear in mind that they will surely be kept as a confidential matter in your Navy.

Begging your pardon for my not answering you before.

I have the honor to be,

Sir,

Your obedient servant,  
(Signed). K. Murakami.  
A.D.C. to Minister of Marine.

Commander J.A. Dormer, U.S.N.

Naval Attaché to

American Embassy.

0554

急

別紙分明台火了

歩込入 拉手 勿依

會申進 4

十有十六日

海軍省副官

○ 船江中 部

會計課長

第三部長

第四部長



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1-6

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Commander, U.S. Navy,  
Naval Attache.

Captain Murakami, I. J. Navy,  
A. D. C. to the Minister of Marine,  
Navy Department, Tokyo.

0555

0556



AMERICAN EMBASSY,  
NAVAL ATTACHE  
TOKYO

21 November 1907.

My dear Captain Murakami :

Again I am obliged to trouble you by requesting you to be kind enough to furnish me, at your convenience, the data called for in the enclosed blank forms of the following Japanese vessels-of-war :-

Satsuma Ikoma Ibuki Kurama Mogami  
Yodo Tone.

Referring to similar Data already furnished of the Aki, I will be pleased to know the arc of train of her five torpedo tubes, the number of water tight compartments, indicated horse power, number of boilers, area of grate surface, kind of armor, number of range finders and location, and fire control.

I enclose the forms ready to fill out, as I desire to relieve the compiler of as much labor as possible.

Hoping I am not exhausting your patience by my many requests,

I am, with best regards,

Very sincerely yours

Commander, U.S. Navy,  
Naval Attache.

Captain Murakami, I. J. Navy,  
A. D. C. to the Minister of Marine,  
Navy Department, Tokyo.

0555

0556





"Yodo"

Name .....		
Class .....	Despatch	Despatch
Displacement in tons, full load .....	1250	1250 T.
Length over all .....	305'-6"	305'-6"
Length between perpendiculars .....	280'-0"	280'-0"
Breadth, extreme .....	32'	32'-0"
Coal Capacity, normal .....	125 T.	125 T.
Corresponding draft of water .....	9'-9"	9'-9"
Coal capacity, full .....	300 T.	300 T.
Corresponding draft of water .....		

Steaming radius,		
Economical speed with normal coal ....		Knots.
"  full  " ....		Knots.
Steaming radius,		
Full speed with normal coal .....		Knots.
"  full  " .....		Knots.

Engines, -description of - *Twin screw, triple expansion with 4 vertical cylinders* *4 vertical cylinders*

I.H.P. .... *6500* 6500 Speed with I.H.P. ... *22* 22 Knots.

Boilers, Number and kind- *4 D.E.B. Miyabara's patent water tube boiler*  
*4 Miyabara's patent water tube boiler*

Area of grate surface ..... *400 sq. ft.* 400 sq. ft.

Armor, kind -

Thickness of belt amidships ...	
Tapering to .....	at ends.
Upper belt .....	

Height of armor above W.L. ....  
 Below water line .....

Conning tower ..... thick.

Turrets (large) ..... thick.  
 Height above water line .....

Turrets (secondary) ..... thick.  
 Height above water line .....

Casemates ..... thick.

Protective deck ..... thick.

Number of water tight compartments .

Full load draft,  
 Aft .....  
 Main .....

Armament,

Main battery .....	2 - 4.7"	2 - 4.7"
Intermediate battery .....		4 - 12 p.
Secondary battery .....	<hr/>	
Field guns .....	4 - 12 p.	
Machine guns .....		
Torpedo tubes, size .....	2 - 18"	
Above water .....	2 - 18"	Arc of train .. 100°
Submerged .....		Arc of train ..

Arc of fire,

Main battery .....	270°	270
(forward .....		
Intermediate battery (middle, port .....		
(middle, starboard ...		
(aft .....		
Secondary battery .....	120°	120

Boats,-

{ Steam cutter - 1	Steam cutter - 1
{ Boats + Kayoisen - 5	Boats + Kayoisen - 5

Complement of officers .....	} about 170. about 170
Crew all told .....	

Number of masts .....

Number searchlights .....	2 - on bridge	2
Location,		on bridge

Number of range finders .....	2 - 4.5'	1
Location,		

Number of funnels .....	2	2
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Fire control system,-

0559





Armament,		
Main battery .....	2 - 4.7"	2 - 4.7"
Intermediate battery .....		
Secondary battery .....		4 - 12p.
Field guns .....	4 - 12p.	
Machine guns .....		
Torpedo tubes, size .....	2 - 18"	90°
Above water .....	2 - 18"	Arc of train .. 90°
Submerged .....		Arc of train ..
Arc of fire,		
Main battery .....	290°	290°
(forward .....	-	
Intermediate battery (middle, port .....	-	
(middle, starboard .....	-	
(aft .....		
Secondary battery .....	120°	120°
Boats,-		
	{ Steam Cutter - 1	- Steam Cutter - 1
	{ Boats & Kayoisen - 5	Boats & Kayoisen - 5
Complement of officers .....	} About 178	about 178
Crew all told .....		
Number of masts .....	1	1
Number searchlights .....	2 on bridge	2 on bridge
Location,		
Number of range finders .....	2 - 4.5'	1
Location,		
Number of funnels .....	3	3
Fire control system,-	_____	_____

0561

"Tone"



Name .....	2nd class Cruiser. 2 <sup>nd</sup> Cl. Cruiser
Class .....	4130 T. 4130 T.
Displacement in tons, full load .....	403' 403'
Length over all .....	360' 360'
Length between perpendiculars .....	47' 47'
Breadth, extreme .....	300 T. 300 T.
Coal Capacity, normal .....	16'-8" 16'-8"
Corresponding draft of water .....	950 T. 950 T.
Coal capacity, full .....	
Corresponding draft of water .....	

Steaming radius,		
Economical speed with normal coal ....		Knots.
" " full " ....		Knots.
Steaming radius,		
Full speed with normal coal .....		Knots.
" " full " .....		Knots.

Engines, -description of - *Twin screw, triple expansion with 4 vertical cylinders*  
*Twin screw, triple expansion with 4 vertical cylinders*  
*4 vertical cylinders*

I.H.P. .... *15000* Speed with I.H.P. ... *23* Knots.

Boilers, Number and kind- *16 9 Miyabara patent water tubes*  
*16 (S.E.B.) Miyabara* *rails*

Area of grate surface ..... *949 949 sq. ft.*

Armor, kind -

Thickness of belt amidships ...	
Tapering to .....	at ends.
Upper belt .....	

Height of armor above W.L. ....  
 Below water line .....

Conning tower ..... *4"* thick. *4"*

Turrets (large) ..... thick.  
 Height above water line .....

Turrets (secondary) ..... *Thick*  
 Height above water line .....

Casemates ..... thick.  
 Protective deck ..... *3"* thick. *3"*

Number of water tight compartments .

Full load draft,  
 Aft .....  
 Main .....

Armament,			
Main battery .....	2-6"	2-6"	
Intermediate battery .....	10-4.7"	10-4.7"	
Secondary battery .....			
Field guns .....	2-12p	2-12p	
Machine guns .....	2-maxim	2-maxim	
Torpedo tubes, size .....	3-18"		70°
Above water .....	3-18"	Arc of train ..	70°
Submerged .....		Arc of train ..	
Arc of fire,			
Main battery .....			
(forward .....	270°	270°	
Intermediate battery (middle, port .....	-		
(middle, starboard ...	-		
(aft .....	270°	270°	
Secondary battery .....	120°	120°	
Boats,-	(Steam cutter	1	Steam Cutter 1
	Boats = Kayoism	8	Boats + Kayoism 8
Complement of officers .....			} about 360. about 360
Crew all told .....			
Number of masts .....	2		2
Number searchlights .....		4 on Bridges	4 on bridge
Location,			
Number of range finders .....		3-4.5'	2
Location,			
Number of funnels .....	3		3
Fire control system,-			—
	Same as "Aki"		

0563



Name ..... "Ioukei"  
 Class ..... 1st class Cruiser / 1st. Cruiser  
 Displacement in tons, full load ..... 14600. 14600  
 Length over all ..... 485' 485'  
 Length between perpendiculars ..... 450' 450'  
 Breadth, extreme ..... 75'-6" 75'-6"  
 Coal capacity, normal ..... 600 600 T.  
 Corresponding draft of water ..... 26' 26'  
 Coal capacity, full ..... 2000 2000 T.  
 Corresponding draft of water ..... 27'-11" —

Steaming radius,  
 Economical speed with normal coal ..... Knots.  
 " " full " ..... Knots.  
 Steaming radius,  
 Full speed with normal coal ..... Knots.  
 " " full " ..... Knots.

Engines, -description of - Twin Screw. Curtis Turbine  
 Twin Screw Curtis Turbine

I.H.P. .... 24000 Speed with I.H.P. ... 22 Knots.

Boilers, Number and kind - 12 D.E. Miyabara 18 Miyabara  
 8 S.E.

Area of grate surface ..... 1648'2 <sup>sq</sup> ft. 1648.2 sq. ft.

Armor, kind - Kure Kure

Thickness of belt amidships ..... 7" 7"  
 Tapering to ..... 4" 4" at ends.  
 Upper belt ..... 5" 5"

Height of armor above W.L. .... 16'-3" 16'-3"  
 Below water line ..... 3'-9" 3'-9"

Conning tower ..... 9'9" thick.

Turrets (large) ..... 7" 7" thick.  
 Height above water line ..... Fore - 28'6" Fire 28'-6"  
 aft - 22'6" aft 22'-6"

Turrets (secondary) ..... thick.  
 Height above water line .....

Casemates <sup>Battery</sup> ..... 5" 5" thick.

Protective deck ..... 1 1/2" 1 1/2" thick.

Number of water tight compartments .

Full load draft,  
 Aft .....  
 Main ..... 27'-11" —  
 Mean .....





"Kurama"

Name .....  
 Class ..... 1<sup>st</sup> class Cruiser  
 Displacement in tons, full load ..... 14600.  
 Length over all ..... 485'-0"  
 Length between perpendiculars ..... 450'-0"  
 Breadth, extreme ..... 75'-6"  
 Coal capacity, normal ..... 600T  
 Corresponding draft of water ..... 26'  
 Coal capacity, full ..... 2000.  
 Corresponding draft of water ..... 27'-11"

Steaming radius,  
 Economical speed with normal coal .... Knots.  
 " " full " .... Knots.

Steaming radius,  
 Full speed with normal coal .... Knots.  
 " " full " .... Knots.

Engines, -description of - *twin screw triple expansion with vertical cylinders*  
*twin screw triple expansion with vertical cylinders*

I.H.P. .... 22500 Speed with I.H.P. .... 21 1/4 Knots.

Boilers, Number and kind - *28 S.E.B. Miyabara's patent water tubes*  
*28 S.E.B. Miyabara Boilers*

Area of grate surface ..... *1500*  
*1500 sq. ft.*

Armor, kind -

Thickness of belt amidships ..... 7"  
 Tapering to ..... 4" at ends.  
 Upper belt ..... 5"

Height of armor above W.L. .... 16'-3"  
 Below water line ..... 3'-9"

Conning tower ..... 9" thick.

Turrets (large) ..... 7" thick.  
 Height above water line ..... *Fore 28'-6"*  
*Aft 22'-6"*

Turrets (secondary) ..... — thick.  
 Height above water line .....

Casemates *Battery* ..... 5" thick.

Protective deck ..... 1 1/2" thick.

Number of water tight compartments .

Full load draft,  
 Aft .....  
 Main ..... 27'-11"  
*et*







Armament,		
Main battery .....	4-12"	4-12"
Intermediate battery .....	12-6"	12-6"
Secondary battery .....	12-4.7"	12-4.7"
Field guns .....	2-12p	2-12p.
Machine guns .....	4-Maxim	4-Maxim
Torpedo tubes, size .....		
Above water .....	3-18"	Arc of train ..
Submerged .....	3-18"	Arc of train ..
Arc of fire,		
Main battery .....	270°	270°
(forward .....	150°	} 150°-120°
Intermediate battery (middle, port .....	120°	
(middle, starboard ...	120°	
(aft .....	150°	
Secondary battery .....	120°	
Boats,-		
	{ Veddette boat	1 Veddette boat- 1
	{ Steam pinnac	2 Steam Pinnacs 2
	{ Boats + Kayasen	10 Boats + Kayasen 10
Complement of officers .....	33	about 33
Crew all told .....	787	about 787
Number of masts .....	2	2
Number searchlights .....	{ 1 - on Top	1 on top
Location,	{ 4 - on Bridges	4 on bridges
Number of range finders .....	{ 2 - 9'	} 2
Location,	{ 1 - 4.5'	
Number of funnels .....	2	2
Fire control system,-	Same as "Aki"	Same as Aki

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" *Satsuma* "

Name .....		
Class .....	Battle ship	Battle ship
Displacement in tons, full-load .....	19200 <sup>T</sup>	19,200 T.
Length over all .....	482'	482'
Length between perpendiculars .....	450'	450'
Breadth, extreme .....	83' 6"	83'-6"
Coal capacity, normal .....	750 <sup>T</sup>	750 T.
Corresponding draft of water .....	27' 6"	27'-6"
Coal capacity, full .....	3000 <sup>T</sup>	3000 T.
Corresponding draft of water .....	30'-2"	_____

Steaming radius, Economical speed with normal coal .....	_____	Knots.
" " " full " .....	_____	Knots.
Steaming radius, Full speed with normal coal .....	_____	Knots.
" " " full " .....	_____	Knots.

Engines, -description of - *Twin screw, triple expansion with 4 vertical cylinders*  
*twin screw, triple expansion with 4 vertical cylinders*

I.H.P. .... 17300 Speed with I.H.P. ... *18 1/4* Knots.

Boilers, Number and kind - *20<sup>SEP</sup> Miyabara's patent water tube boilers*  
*20 S.E.B. Miyabara*

Area of grate surface ..... *1240<sup>sq</sup> 1240 sq ft.*

Armor, kind - *Kure Kure*

Thickness of belt amidships .....	9"	9"	
Tapering to .....	4"	4"	at ends.
Upper belt .....	5"	5"	

Height of armor above W.L. ....	17'-0"	17'-0"
Below water line .....	4'-3"	4'-3"

Conning tower ..... *9" 9" thick.*

Turrets (large) .....	9" 9" thick.
Height above water line .....	23'-5"
	23'-6"

Turrets (secondary) .....	— thick.
Height above water line .....	

Casemates ..... *5" 5" thick.*

Protective deck ..... *2" 2" thick.*

Number of water tight compartments .

Full load draft,  
 Aft .....  
 Main ..... *30'-2"*

Armament,  
 Main battery ..... 4-12" 4-12"  
 Intermediate battery ..... 12-10" 12-10"  
 Secondary battery ..... 12-4.7' 12-4.7'  
 Field guns ..... 4-12p 4-12p.  
 Machine guns ..... 4-maxim. 4 Max.  
 Torpedo tubes, size .....  
 Above water ..... Arc of train ..  
 Submerged ..... 5-18" Arc of train ..  
 5-18"

Arc of fire,  
 Main battery ..... 276° 270°  
 Intermediate battery (forward ..... 150°  
 (middle, port ..... 120° } 150°-120°  
 (middle, starboard .. 120°  
 (aft ..... 150°  
 Secondary battery ..... 120°

Boats,-  
 { Védette 2 Védette 2  
 steam pinnace 1 Steam pinnace 1  
 Boats & Kayoisen 10 Boats and Kayoisen 10

Complement of officers ..... } About 1000  
 Crew all told ..... } About 1000.

Number of masts ..... 2 2

Number searchlights ..... { 1-on Top 1 on top  
 Location, { 4-on Bridges 4 on bridges

Number of range finders ..... { 2-9' 2  
 location, { 1-4.5' 1 on fore bridge  
 1 on aft. "

Number of funnels ..... 2 2

Fire control system,- Same as "Aki"  
 Same as "Aki"