

CANARY G.W. JR

RESTRICTED

GROUP SQW1-C
IV

CLASS-43H

ACADEMIC DEPARTMENT
ARMY AIR FORCES PREFLIGHT SCHOOL (PILOT)

SAN ANTONIO AVIATION CADET CENTER

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SAN ANTONIO, TEXAS

RECOGNITION OF SHIPS

INTRODUCTION

SHIP RECOGNITION

Surface ship recognition is not a study which can be approached in a haphazard manner nor is it a subject which can be mastered by committing a few facts to memory. Only constant study and analysis will place you in a position to make a swift decision between friend and foe, thus saving your life or the lives of your comrades.

The purpose of this notebook is to give you a permanent record of the analysis of recognition characteristics of surface ships. It is essential that the principles should be soundly learned in the initial stages of this training.

The classroom instruction in recognition analysis will follow the procedure of the U. S. Navy's Fleet Aircraft Tactical Unit as closely as possible. Although there are many ways of classifying surface ships, the systematic analysis used by the Fleet Aircraft Tactical Unit is the best practical approach from the standpoint of the aircraft personnel.

It is very important that you keep your notebook up-to-date. Whenever you see pictures of ships make an analysis and record it in your notebook. New classes and types of ships will be introduced from time to time. Be sure you know them -- Be Alert.

NOMENCLATURE

I. STANDARD SHIP ABBREVIATIONS

- A. Fore - Forward
- B. Aft - After
- C. S.L. Plat. - Searchlight platform
- D. CAT - Catapult
- E. T.T. - Torpedo Tube
- F. Sup. St. - Superstructure
- G. BB - Battleship
- H. CA - Heavy Cruiser
- I. CL - Light Cruiser
- J. DD - Destroyer
- K. CV - Aircraft Carrier
- L. AV - Seaplane tender

II. DIRECTION

- A. Forward - Toward the front end of the ship.
- B. Aft - Toward the rear end of the ship.
- C. Inboard - Toward the center of the ship.
- D. Outboard - Toward the water.
- E. Aloft - Upward
- F. Below - Down
- G. Ahead - In front of or forward.
- H. Astern - Behind or backward.

NOMENCLATURE

III. AREAS

- A. Forward - The front end.
- B. Aft - The rear end.
- C. Starboard - The right side.(looking forward)
- D. Port - The left side.(looking forward)
- E. Bow - The forward end of a ship.
 - 1. Types (United States)
 - a. New BB bow (Figure 1)

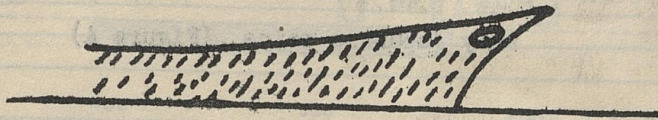


FIGURE 1

- b. Clipper bow (Figure 2)

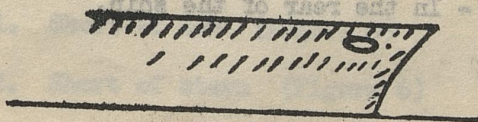


FIGURE 2

NOMENCLATURE

c. Old BB bow (Figure 3)

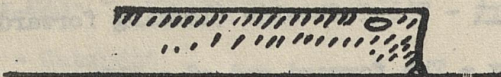


FIGURE 3

2. Types (Japanese)

The "S" shaped bow which is characteristic of many Japanese ships. (Figure 4)

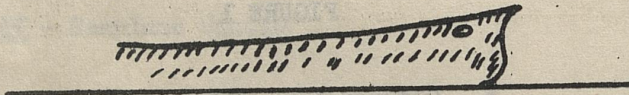


FIGURE 4

- F. Stern - The after end of a ship.
- G. Quarter - One side of the after end of a ship.
- H. Amidship - Near the middle of the ship.
- I. Abaft - In the rear of the ship.

IV. DECKS

- A. Boat Deck - An upper deck used for the storage of small boats.

NOMENCLATURE

B. Main Deck - The highest deck which runs the full length of the ship.

C. Flight Deck - The upper deck of aircraft carriers used for launching and landing planes. (Figure 5)

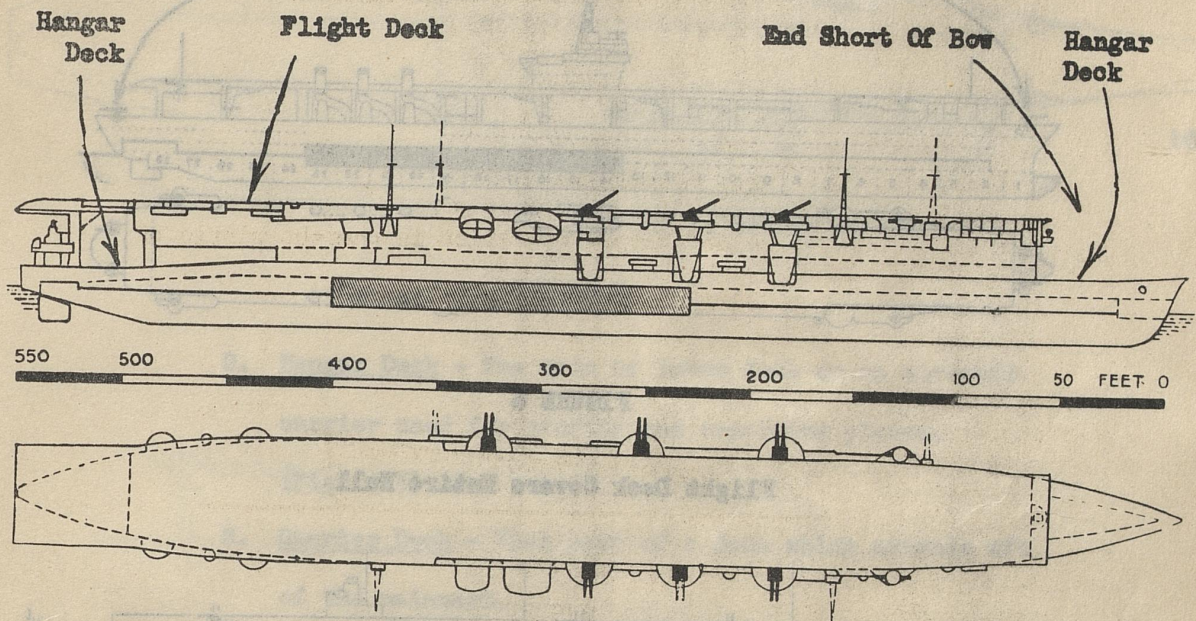


FIGURE 5

1. Short of bow (Figure 5)
2. Short of stern (Figure 6)
3. Short of bow and stern (Figure 6)

NOMENCLATURE

- 4. Covers entire hull (Figure 7)
- 5. Flight deck cut in narrow at bow (Figure 8)

Ends Short Of Bow And Stern

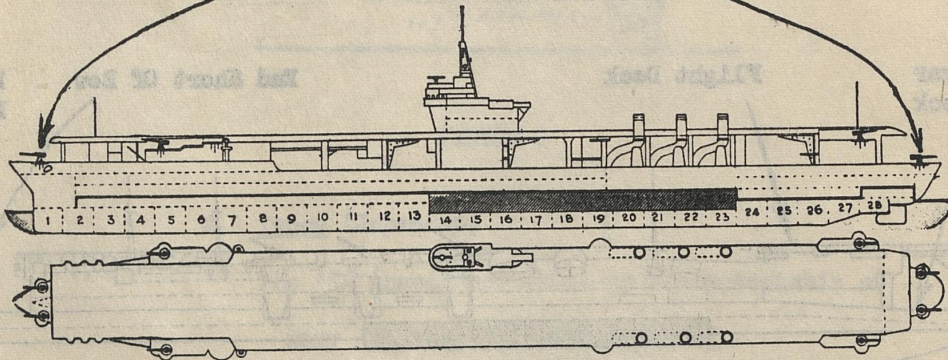


FIGURE 6

Flight Deck Covers Entire Hull

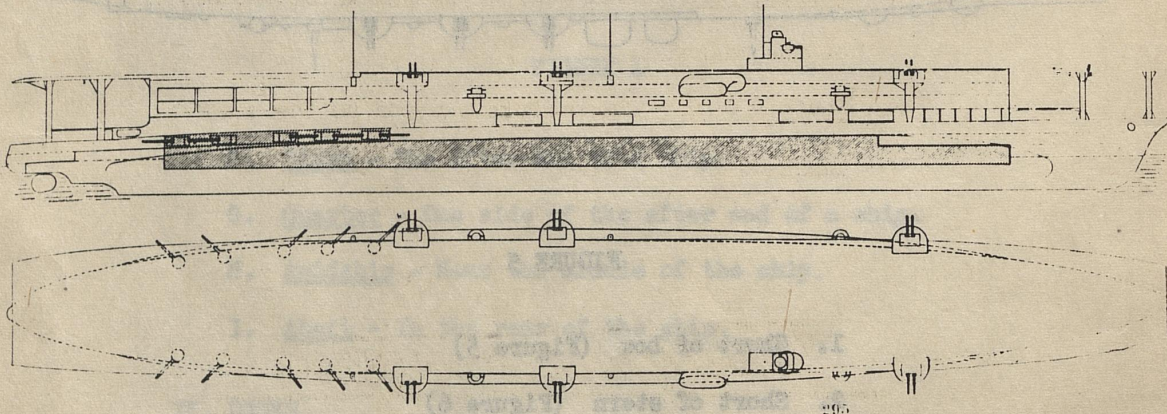
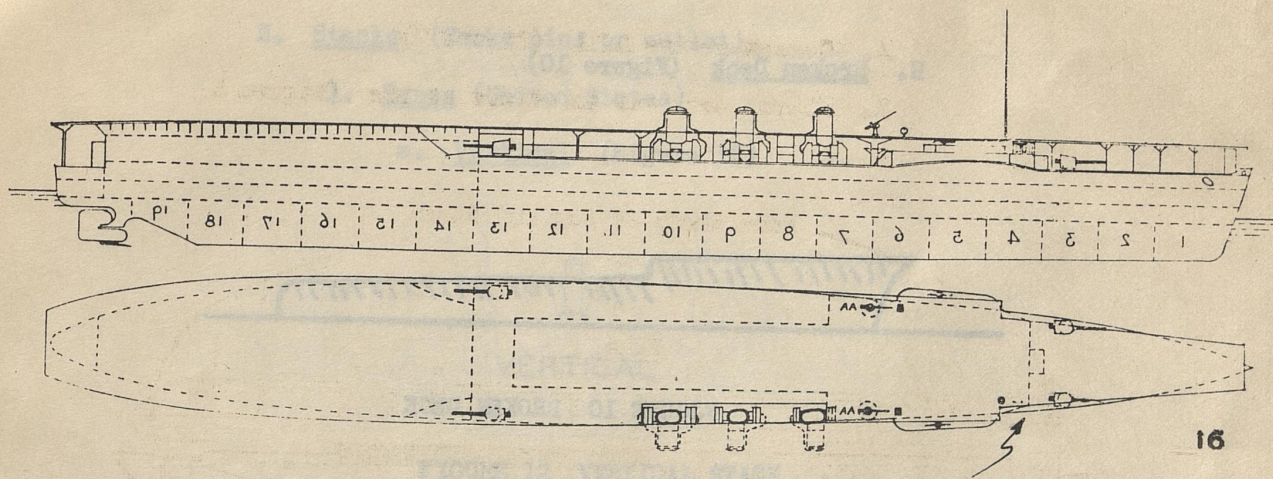


FIGURE 7

A P P S 3257

NOMENCLATURE



Cut in narrow at bow

FIGURE 8

D. Hangar Deck - The main or lower deck on an aircraft carrier used for storing and repairing planes.

(Figure 5)

E. Quarter Deck - That part of a deck which extends aft of the mainmast.

F. Weather Deck - Those decks exposed to the weather.

G. Flush Deck - Straight deck line. (Figure 9)

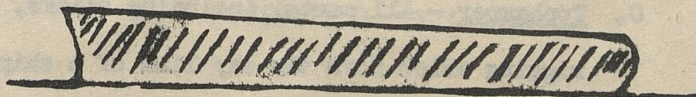


FIGURE 9 FLUSH DECK

NOMENCLATURE

H. Broken Deck (Figure 10)



FIGURE 10 BROKEN DECK

I. Wavy Deck Line - Characteristic of many Japanese vessels. (Figure 11)

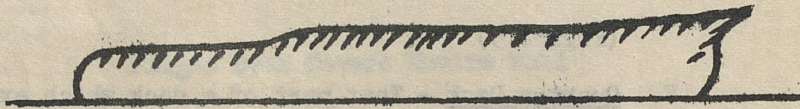


FIGURE 11 WAVY DECK LINE

V. PARTS

- A. Forecastle - The raised portion forward.
- B. Superstructure - High structure above the main deck.
- C. Tophammer - All parts, including stacks, mast and rigging which form the sky line of a ship above her top deck.
- D. Side - That outward portion included between the bottom and the highest deck line.

BRITAIN
NOMENCLATURE

E. Stacks (Smoke pipe or outlet)

1. Types (United States)

a. Vertical (Figure 12)



VERTICAL

FIGURE 12 VERTICAL STACK

b. Raking (Figure 13)



RAKING

FIGURE 13 RAKING

c. Inverted "Y" (Figure 14)



INVERTED "Y"

FIGURE 14 INVERTED "Y"

NOMENCLATURE

2. Types (Japanese)

a. Combination (Figure 15)

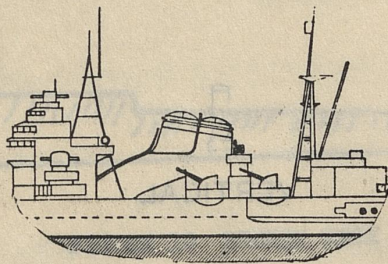


FIGURE 15 COMBINATION

b. Combination Raking (Figure 16)

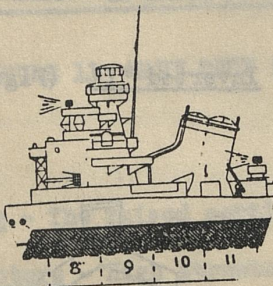


FIGURE 16 COMBINATION RAKING

NOMENCLATURE

c. Assorted Sizes (Heterogeneous) (Figure 17)

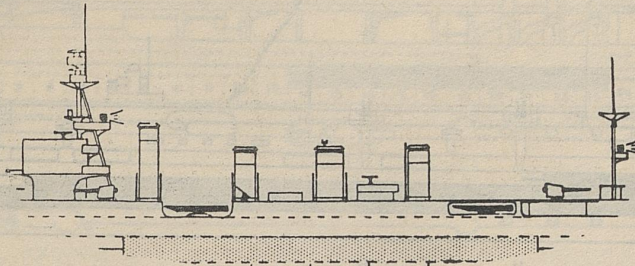


FIGURE 17 (ASSORTED SIZES)

3. Miscellaneous

a. Jap single (Figure 18)

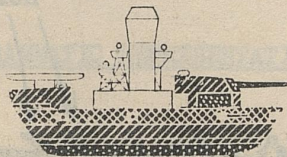


FIGURE 18 JAP SINGLE

NOMENCLATURE

b. Horizontal Stack (Figure 19)

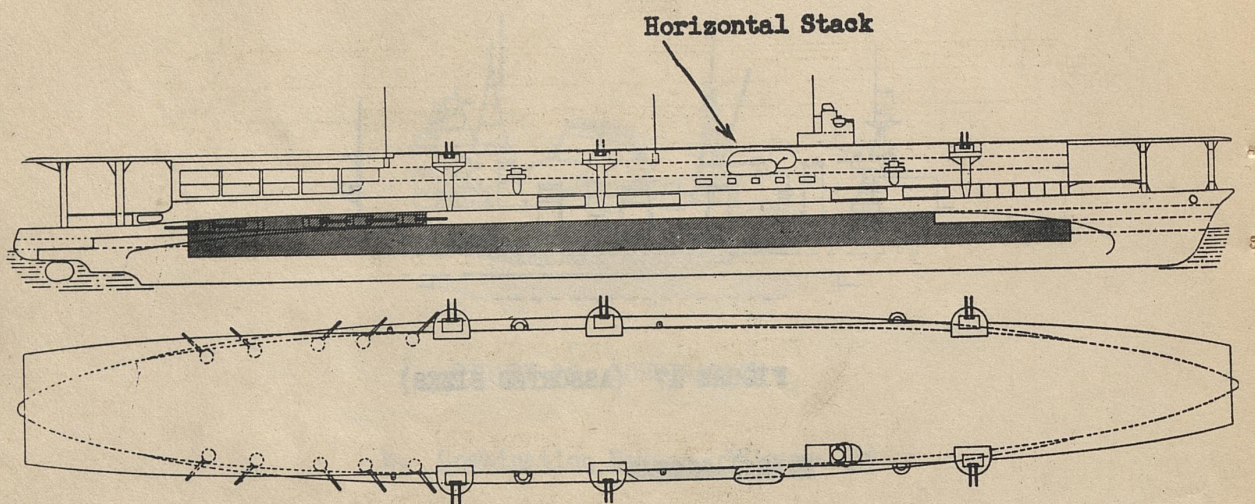


FIGURE 19 HORIZONTAL STACK

c. Horizontal Raking Stack (Figure 20)

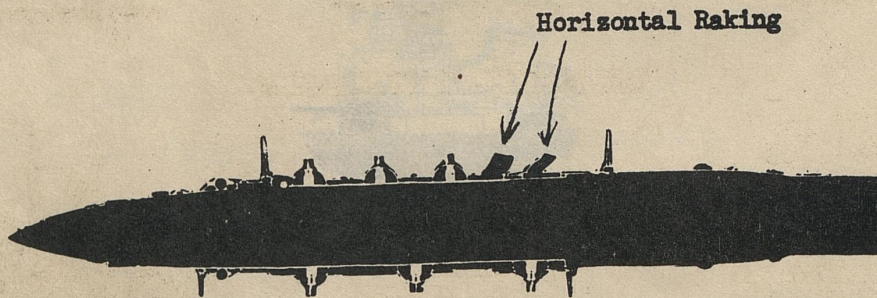


FIGURE 20 HORIZONTAL RAKING STACK

NOMENCLATURE

d. Folding stacks (Figure 21)

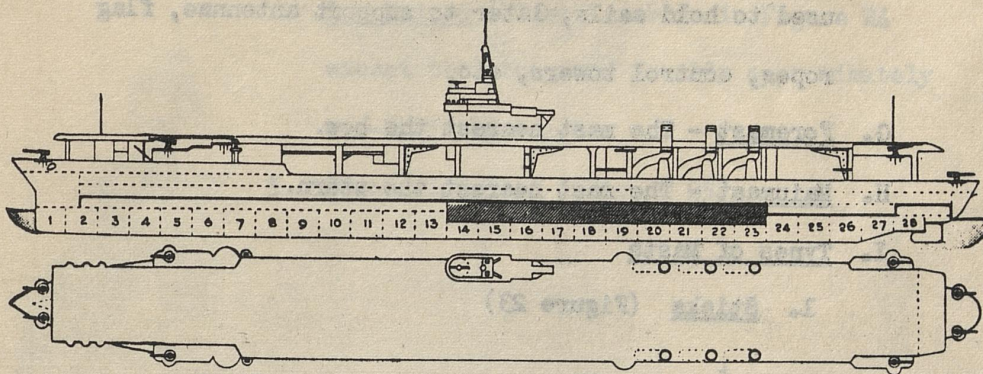
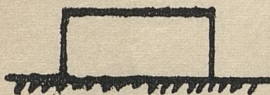


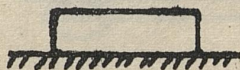
FIGURE 21 FOLDING STACKS

- e. Huge stack (Figure 22)
- f. Broader than tall (Figure 22)
- g. Taller than broad (Figure 22)

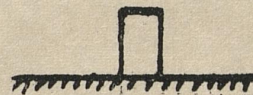
Huge



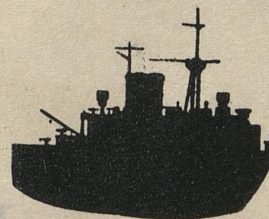
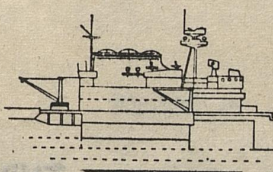
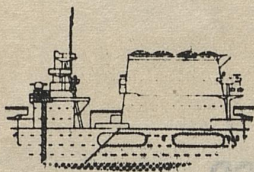
Broader than tall



Taller than broad



DIAGRAMMATIC REPRESENTATION



ACTUAL REPRESENTATION ON A VESSEL

FIGURE 22

NOMENCLATURE

F. Mast - A vertical structure which was originally used to hold sails, later to support antennae, flag ropes, control towers, etc.

G. Foremast - The mast nearest the bow.

H. Mainmast - The mast nearest the stern.

I. Types of Masts

1. Sticks (Figure 23)

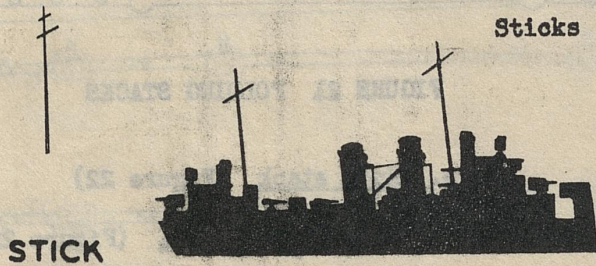


FIGURE 23

2. Tripod (Figure 24)

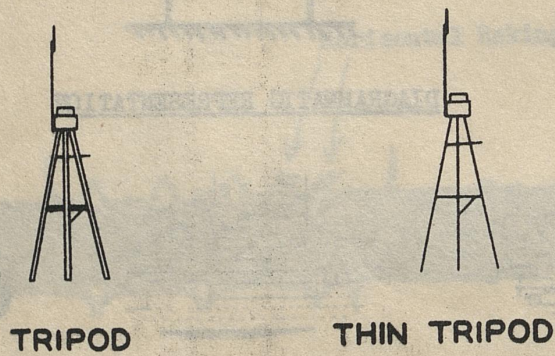


FIGURE 24

NOMENCLATURE

3. Thin Tripod (Figure 24)
4. Low Tripod - Same as shown in Figure 24 except that they are usually approximately one-half the height.
5. Obscured Tripod (Figure 25)

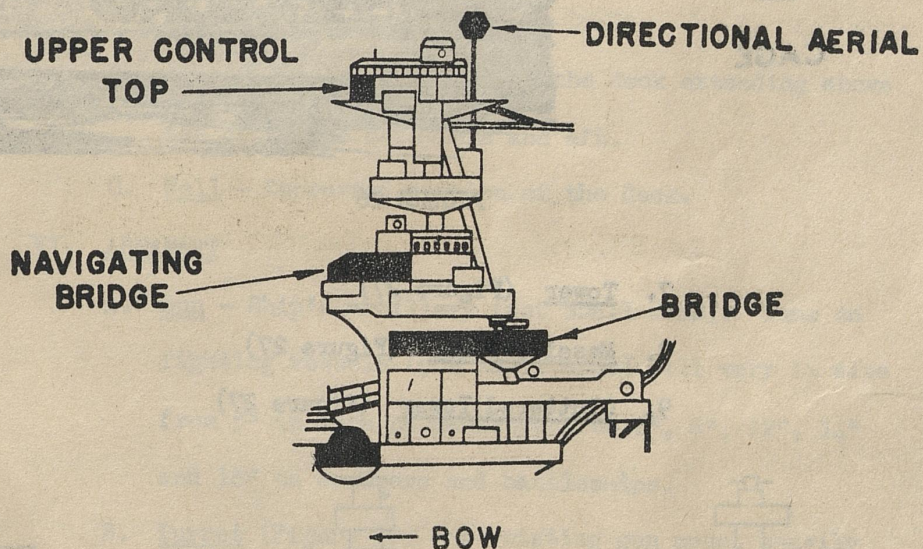


FIGURE 25

6. Cage (Figure 26)

NOMENCLATURE

Cage

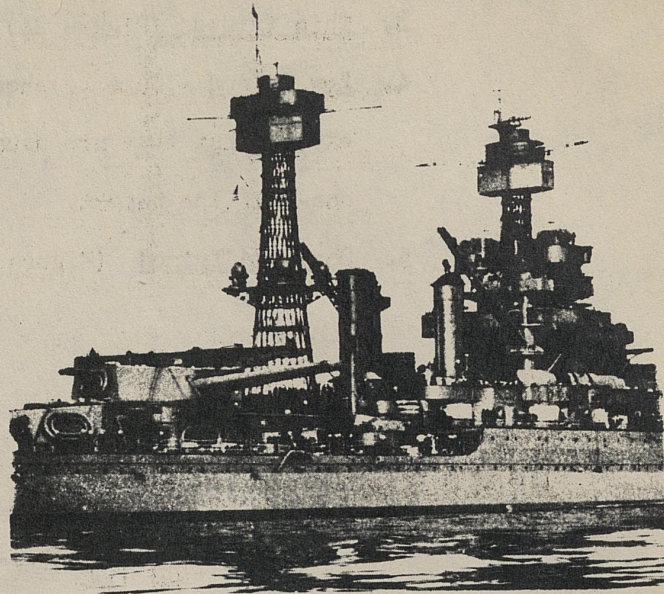
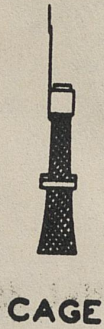
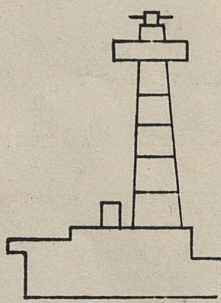
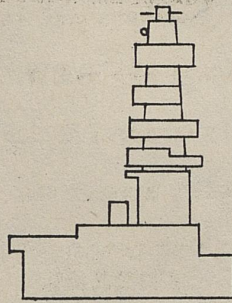


FIGURE 26

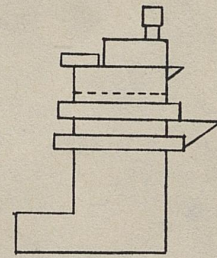
- 7. Tower (Figure 27)
- 8. Massive Tower (Figure 27)
- 9. Cluttered Tower (Figure 27)



TOWER



CLUTTERED TOWER



MASSIVE TOWER

FIGURE 27

NOMENCLATURE

- J. Bridge - Towering structure from which the ship is navigated. (Figure 25)
- K. Conning Tower - Armor plated control station used instead of the bridge during an action. (Figure 30)
- L. Fire Control Towers - Elevated gun control stations sometimes called fighting tops.
- M. Crow's nest - Barrel shaped lookout station on the mast.
- N. Island - Raised portion of the deck extending above the deck line both fore and aft.
- O. Well - Depressed portion of the deck.

VI. ARMAMENT

- A. Gun - Ship's artillery (not small arms). Guns on fighting vessels (not small arms) will vary in size from 5" in bore on destroyers to 6", 8", 12", 14" and 16" on cruisers and battleships.
- B. Turret (Figure 30) - A rotating gun mount heavily protected by armor. A turret is a complete inclosure of armor built around the guns shielding the gun crew with access for personnel and ammunition from the inside. A turret houses the ship's main batteries. This is not true of secondary batteries.
- C. Types of Turrets
 - 1. Singles (Figure 28)

NOMENCLATURE

- 2. Twins (Figure 28)
- 3. Triples (Figure 28)



FIGURE 28 TURRETS

- D. Barbette - Cylindrical armor supporting a turret up which ammunition is passed from the magazine. (Figure 30)
- E. Armor belt - Armor on a ship's side. (Figure 30)
- F. Protective Deck - Horizontal anti-bomb and shell protection. (Figure 30)
- G. Main Battery - A vessel's largest guns all of one size. (Figure 30)
- H. Secondary Batteries - (Usually dual purpose) Smaller guns for use against destroyers and aircraft.
- I. Torpedo Tubes - Cylinders from which torpedos are launched. (Figure 29)

Torpedo Tubes

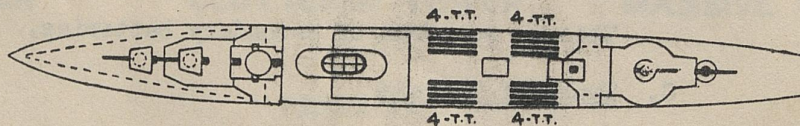


FIGURE 29

NOMENCLATURE

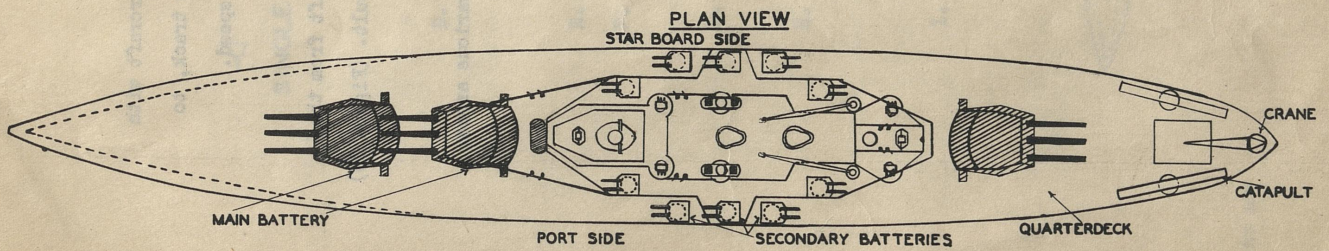
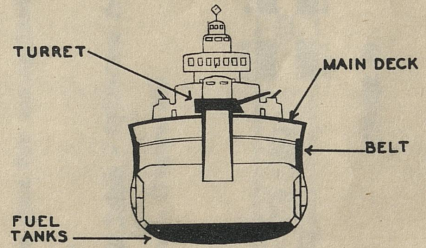
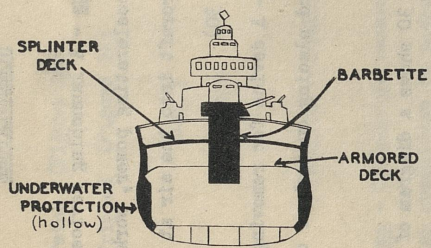
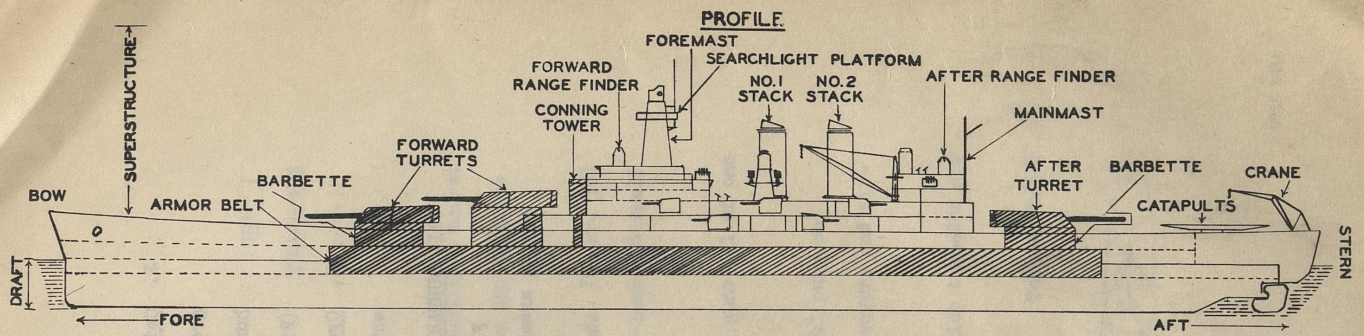
J. Catapults - A launching device for aircraft with great accelerating power, worked on a track, to hurl aircraft into the air at flying speed.

(Figure 30)

K. Cranes - A device for removing aircraft from the water and placing on deck or on catapult. (Figure 30)

VII. SUMMARY

Figure 30 shows a diagram of these various areas, parts, armament, etc., of a fighting vessel.



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FIGURE 30

RECOGNITION OF SHIPS

I. SYSTEMATIC ANALYSIS

In order to learn the various ships of the worlds' navies, some systematic way of studying them must be undertaken. Besides dividing the navies into type ships, the type ships are divided into "classes". These classes are made up of "Sister Ships" or ships built under the same design. The appearance or construction of a sister ship may not be identical due to later additions or reconstruction, but generally their appearance is the same.

In learning the ships of a Navy, it is only necessary to learn the name of the first ship in the class, unless by reconstruction some of the ship's appearance has been changed radically.

II. A. METHOD OF ANALYSIS

The difference between the appearance of the various classes may be learned by systematically observing the following identifying features in the order given as follows:

1. Masts - Type, general appearance and location.
2. Stacks - Type, number, shape, position, slope, relative size.
3. Turrets - Type, number and location.
4. Other Features - Location of torpedo tubes, catapults, cranes, superstructure, etc. which will provide positive identification.

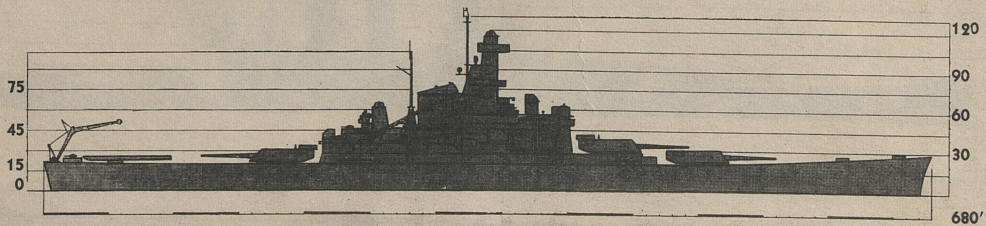
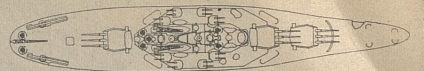
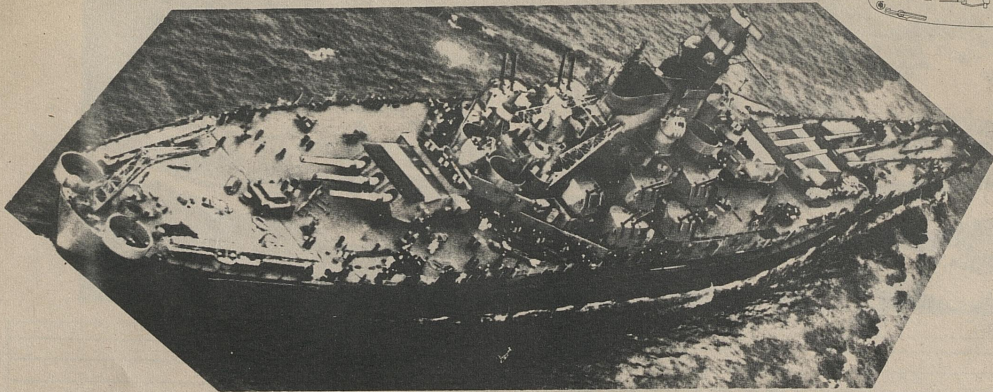
RECOGNITION OF SHIPS

B. EXAMPLE

The California class may be analyzed as follows:

1. Cage foremast and cage mainmast.
2. Two small vertical stacks nearer to masts than to each other.
3. Four turrets, triples, two fore and two aft.
4. Broken deck line, massive superstructure.

C. The remaining portion of this notebook contains photographs or line drawings of U. S. and Japanese battleships, cruisers, aircraft carriers and destroyers. There is space available below each photograph or line drawing in which you will fill according to instructions given in the various lectures with identification data. This will help you to keep in mind the method of classification and will enable you to later classify and identify ships of many types and classes with which you may come in contact.



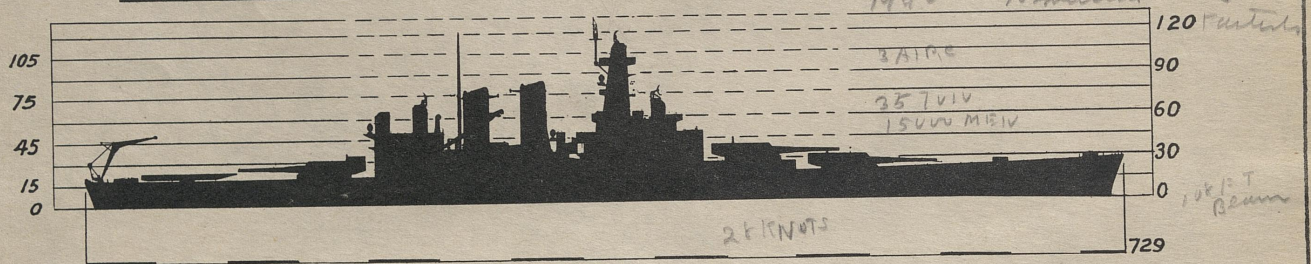
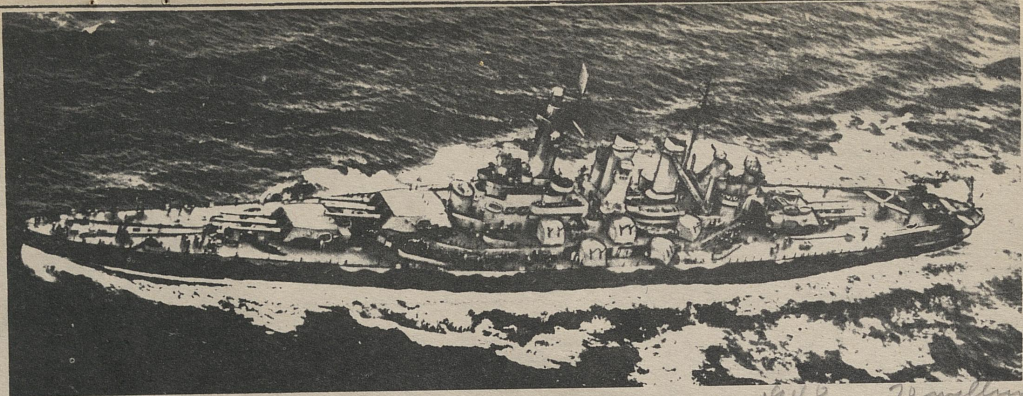
NATIONALITY	U.S.	TYPE	B.B.	CLASS	SOUTH DAKOTA	SERIAL NUMBER	57
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
<i>South Vals</i> INDIANA	58	MASIVE LOWER STICK MAST ABOVE	1 VERT. S ABAFT OF JOIN FORE MAST w/ TOWER	2 FORE 1 AFT TRIP 16 INCH SCL.	FLUSH DECK S.S. MAST MID SHIP ON CENTER ISLAND 2 CAT		
ALABAMA	60	S.S. MAIN STICK	FLAT SIDED		w/ Q Deck. RINGS w/ FIN TALK O ACK ACT. GUNS		
MASSACHUSETTS	59						

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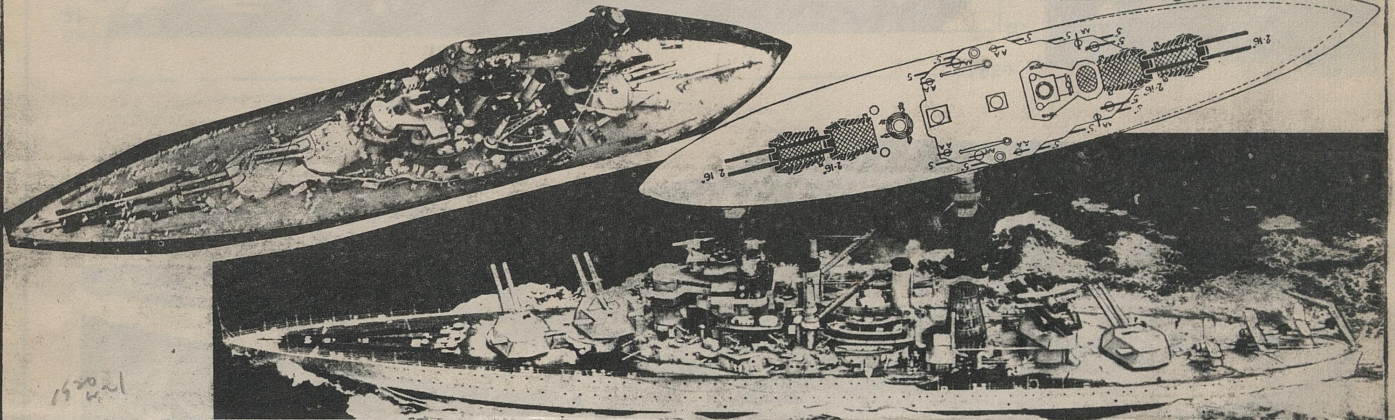
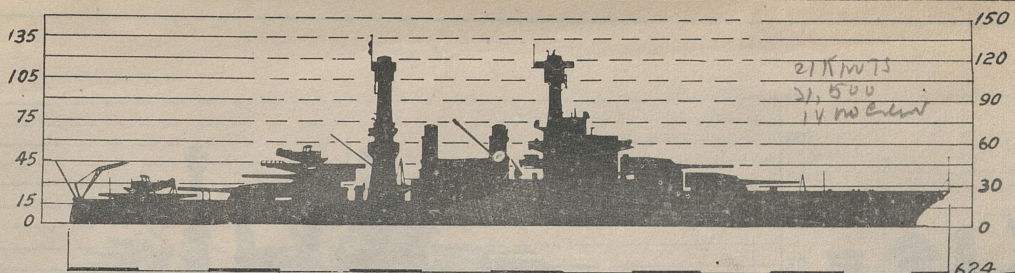
*35,000 tons
15,000 Caliber*

NO PT. HOLES



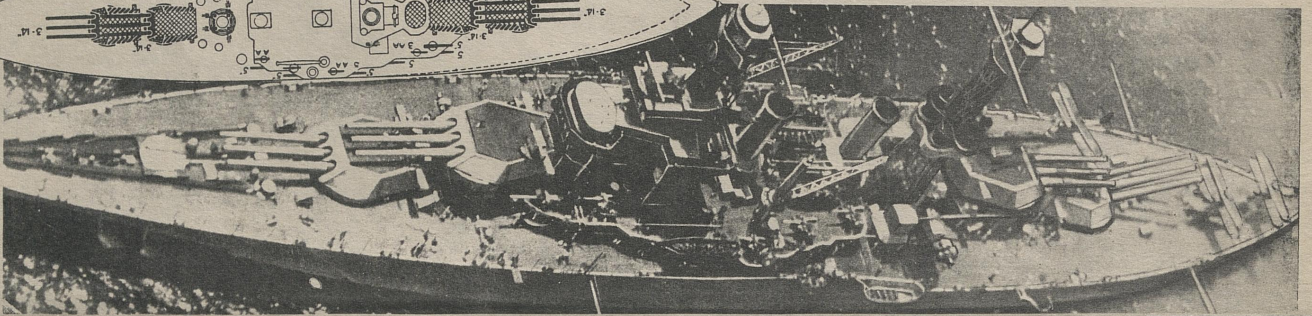
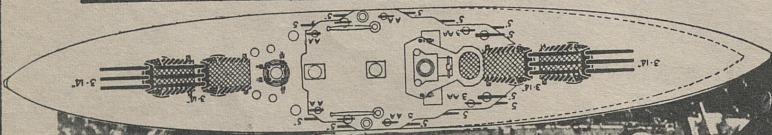
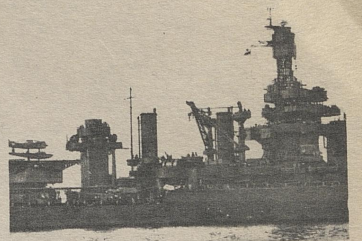
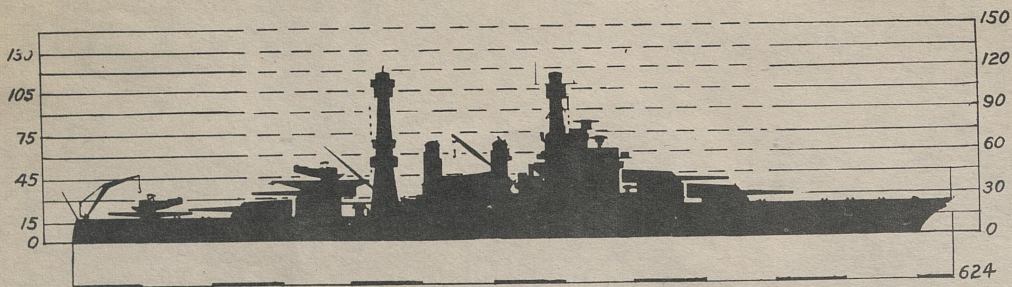
NATIONALITY U.S.		TYPE B.B.	CLASS WASHINGTON	SERIAL NUMBER 56	
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
NORTH CAROLINA	55	TOWER FORE MAST STICK MAIN MAST ABAFT NO 2 ST.	2 VER. FLAT SIDED	3 TRIPLES 2 F. AFT 16 INCH 50 CAL 5 INCH 60 CAL	FLUSH DECK TWO FIRE CONT. TOWERS

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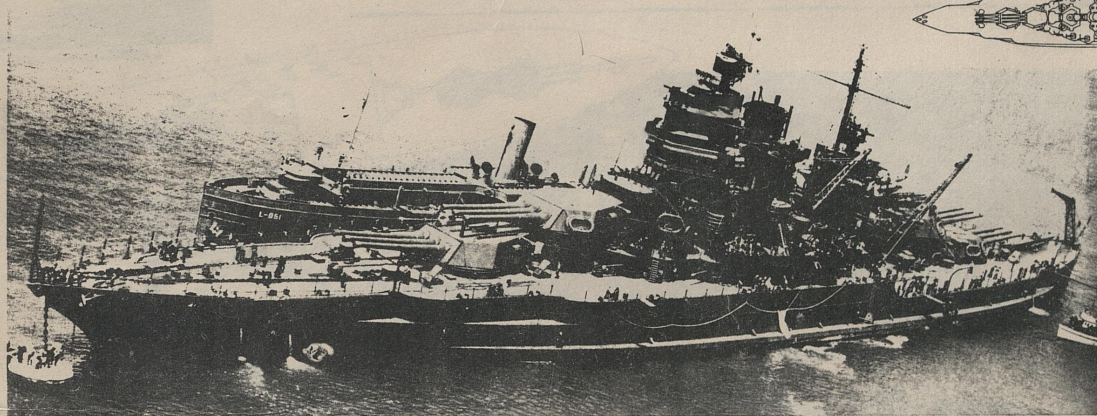
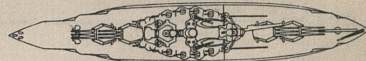
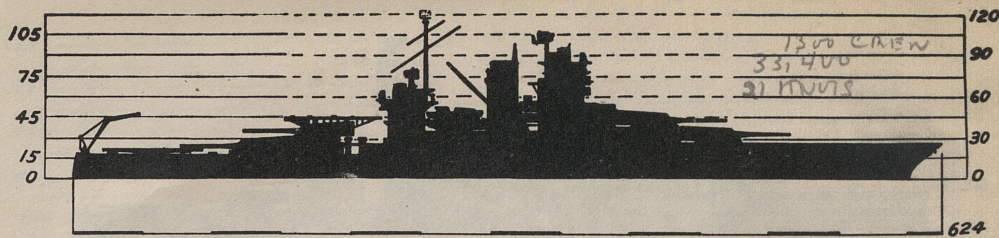
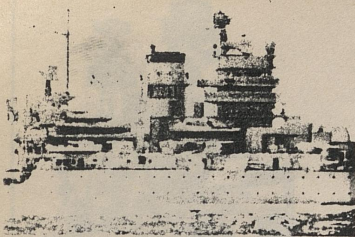
NATIONALITY	U.S.	TYPE	B.B.	CLASS	MARYLAND	SERIAL NUMBER	46
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS		STACKS	TURRETS	OTHER FEATURES	
COLORADO	45	CAGE FORE " MAIN MAST		2 VER STACKS CLUSTER TUMMIST TITAN EACH OTHER	4 twin TURRETS	BROKEN DECK	
WEST VIRGINIA	48						

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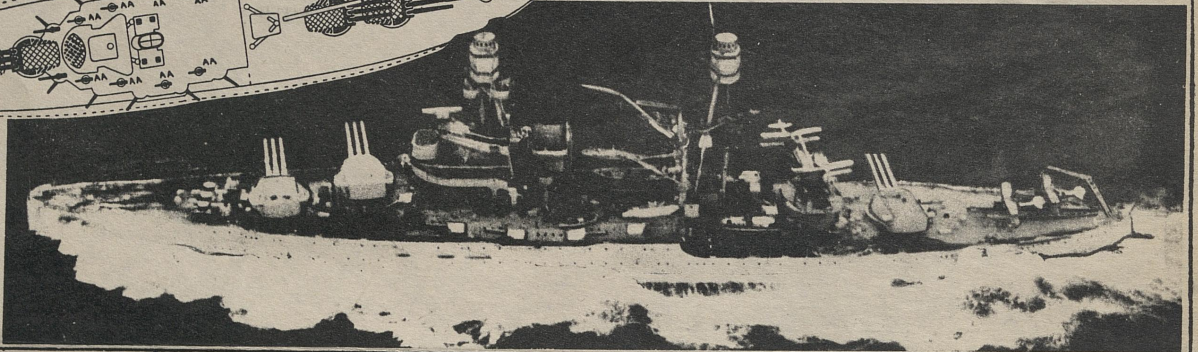
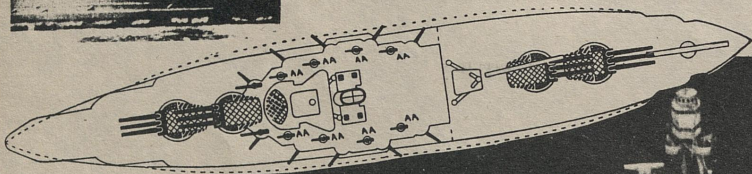
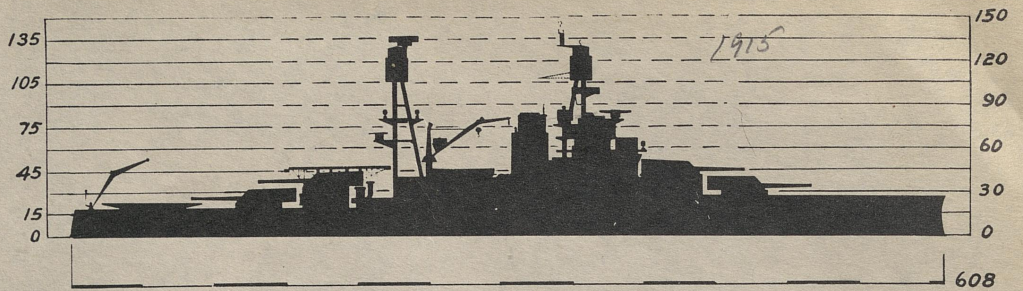
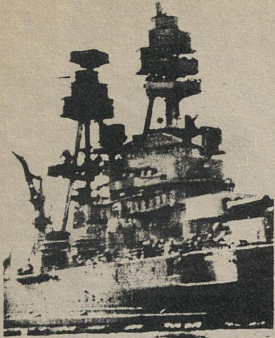
NATIONALITY	U.S.	TYPE	B.B.	CLASS	CALIFORNIA	SERIAL NUMBER	44
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
TENNESSEE Has stick MAIN MAST	43	CABLE PORT " MAIN MAST	2 VIER ST CLOSED TUMMIST	4 TURRETS 14 INCH	BRITISH DIRECT		

RESTRICTED



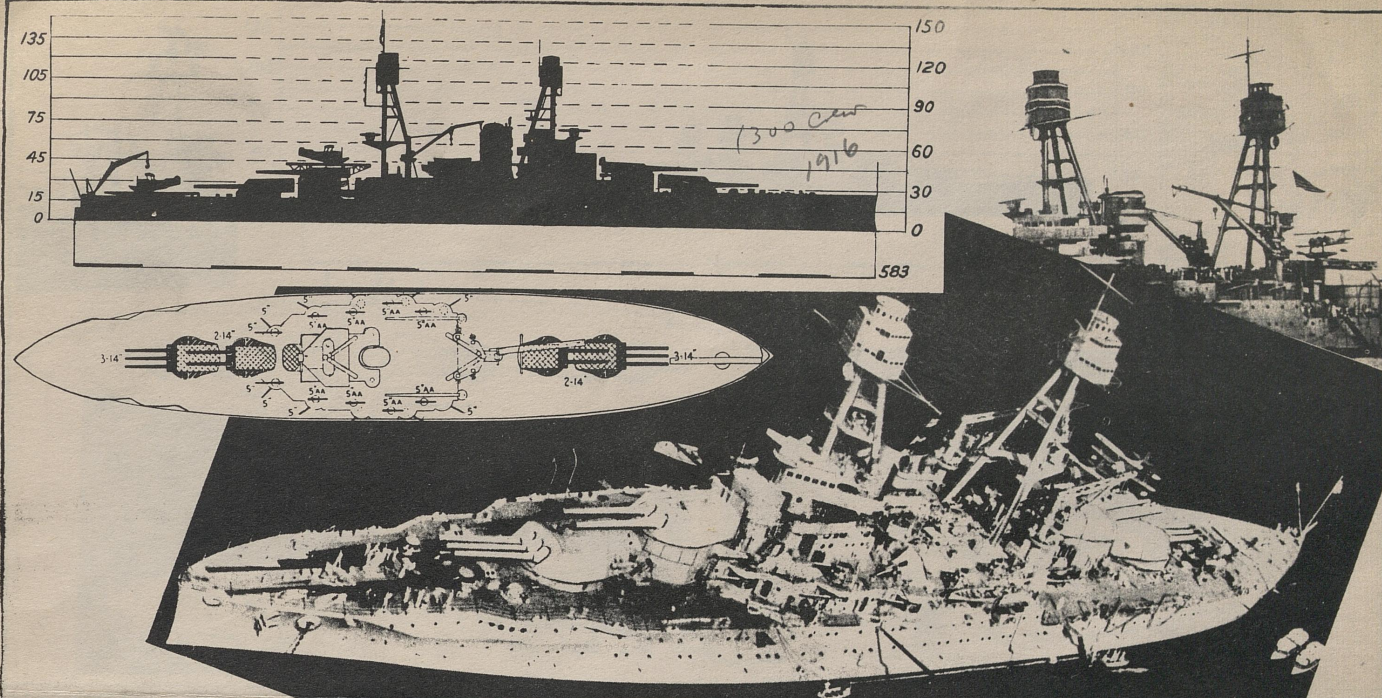
NATIONALITY U.S.		TYPE B.B.	CLASS NEW MEXICO 1917	SERIAL NUMBER 40	
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
MISSISSIPPI	41	MASIVE FORE TOWER STICK MAIN MAST	1 VER LG. - SAME HEIGHT AS FORE TOWER	4 - TRIPLES 2 FUR - 2 HP 7 14 IN 4 50 CAL	13 RUICKEN DECK
IDAHO	42				

RESTRICTED
28



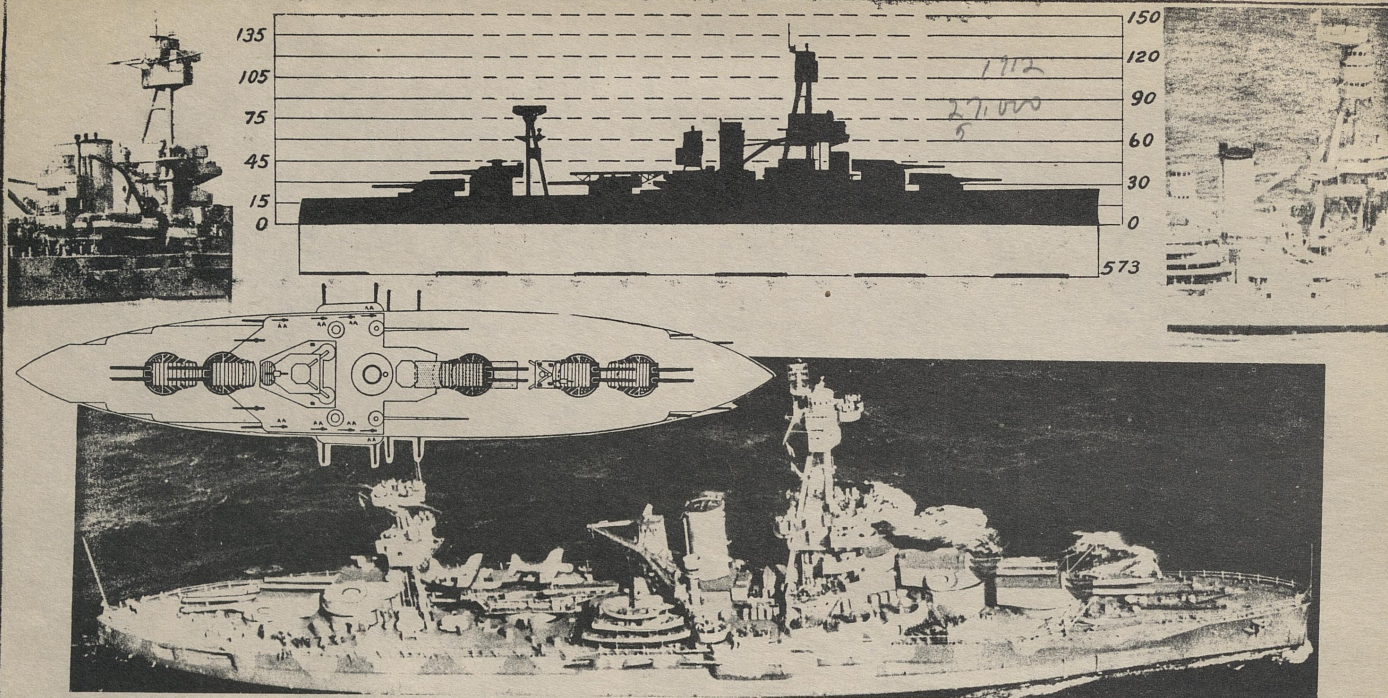
NATIONALITY U.S.		TYPE B.B.		CLASS PENNSYLVANIA		SERIAL NUMBER 38	
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
		TRIPOD MAST AFT + FORE - BOTTOM COVERED BY S.S.	SIG VERTICAL CLOSE TO FORE MAST FLAT SIDED SAME HT. SS FOR.	4 - TRIPLE	BRICKEN DECK CRANE ^{AFT} MASTS		

RESTRICTED



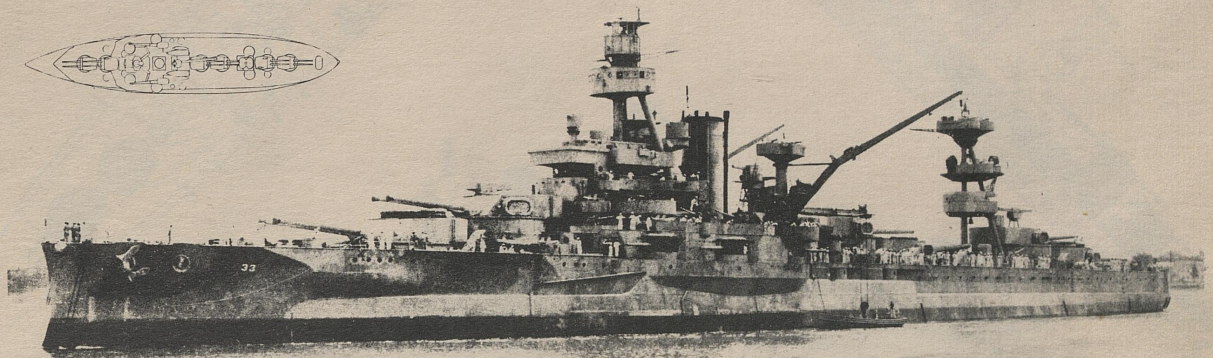
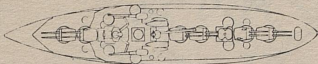
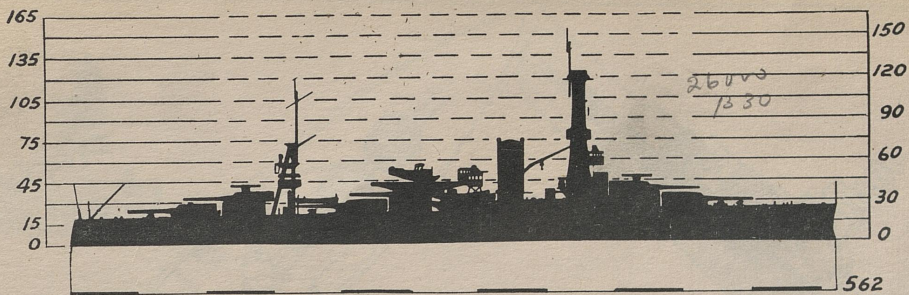
NATIONALITY	U.S.	TYPE	B. B.	CLASS	OKLAHOMA	SERIAL NUMBER	37
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
NEVADA	36	TRYPID FORE + AFT MAIN MAST	SIG VERT. CLOSE TO FORE MAST OVAL - VERT. HIG. THAN S.S.	3-2 - TWIN FORE 2 8 " AFT <i>14 inch 45 cal</i>	BAUTIE N DECK		

RESTRICTED



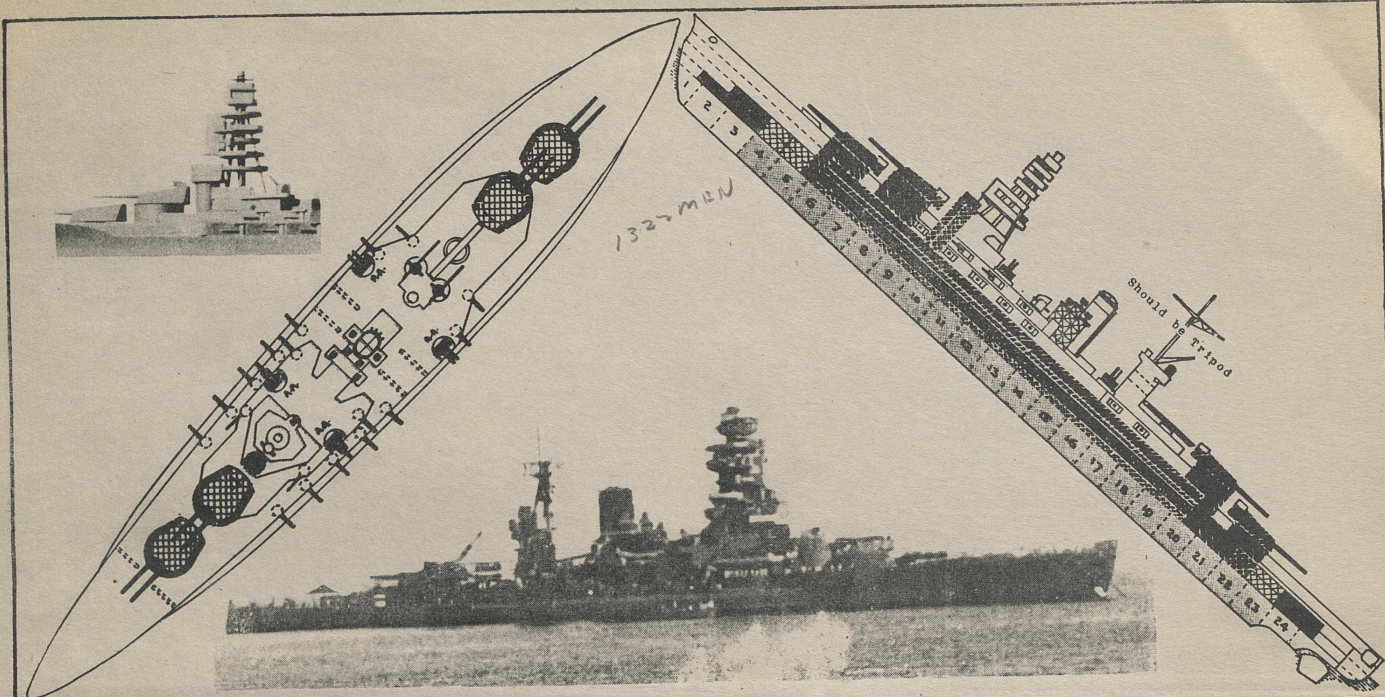
NATIONALITY U.S.		TYPE B. B.		CLASS TEXAS		SERIAL NUMBER 35
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
NEW YORK	34	HI FORE MAST TYP SITI AFT MAIN TYP BOTH TRYPID AFT MAST WAY TO REAR FORE CLUTTERED	ST SIG VERT. NEAR FORE MAST ROUND	1 WIN - 2 FORE 2 AFT 1 MIDS. 14 INCH 45 CAL	BROADSIDE FLUSH DECK FIRE CONTROL AFT STACK	

RESTRICTED



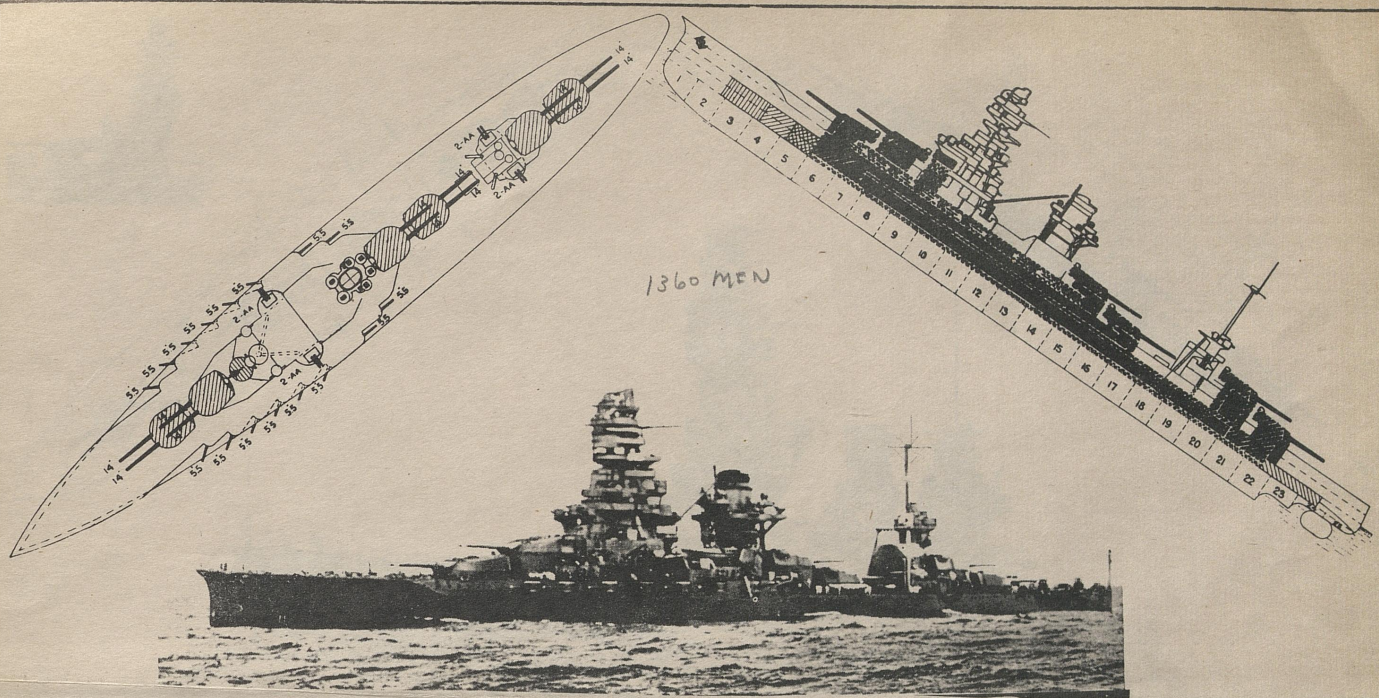
NATIONALITY	U. S.	TYPE	B. B.	CLASS	ARKANSAS	SERIAL NUMBER	33
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
		TRYPID FURK & MINIM MAST WELL AFT. CLUTED BASE OF TOWER STICK ON REAR MAST	SG. VERTICAL ROUND	6 TWIN 2 AFT - 2 MID SHIP 2 FURK 12 inch 60 cal	FLUSH ULBBB BOW		

RESTRICTED
32



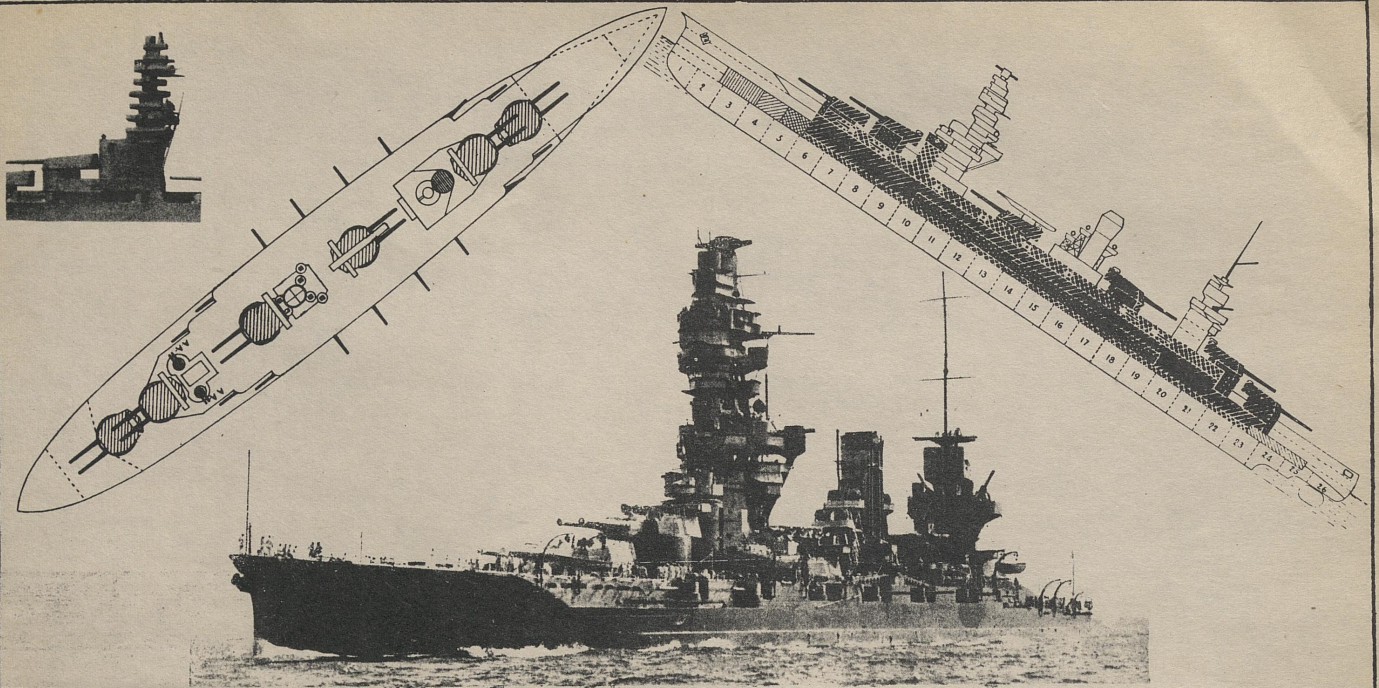
NATIONALITY	JAP	TYPE	B. B.	CLASS	MUTSU	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
NAGATO		FOUR CLUTRED TRIPUD - TRIPUD MAIN MAST	50 STACK NEAR MAIN MAST - 56. P.H. ON STACK	4 TWIN 16 inch 45 cal	BROKEN	

RESTRICTED



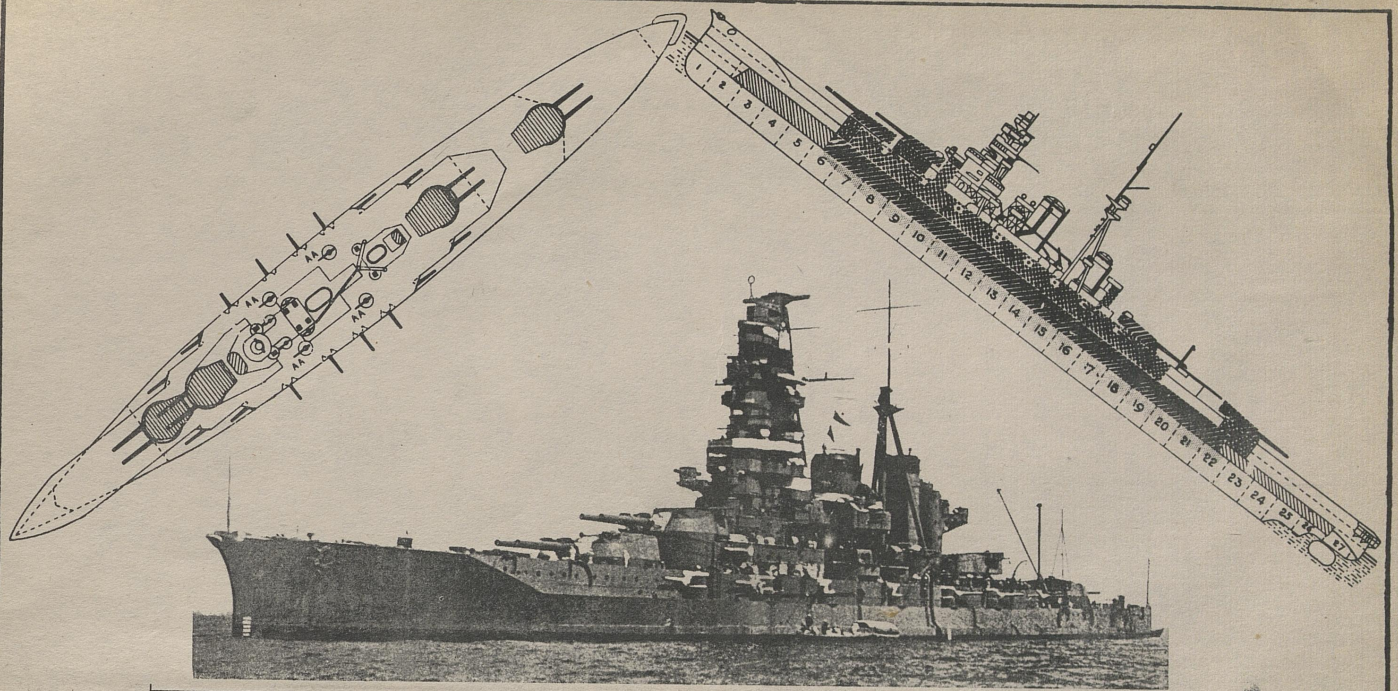
NATIONALITY	JAP	TYPE	B. B.	CLASS	ISE	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
HYUGA		FOUR ORTHOG TRIPUD MAIN STICK WELL TO REAR	TALL SG VER. NEAR MID SHIP S.K.P.	6 TWIN 2 FORE 2 MIDS. 2 AFT	/	

RESTRICTED



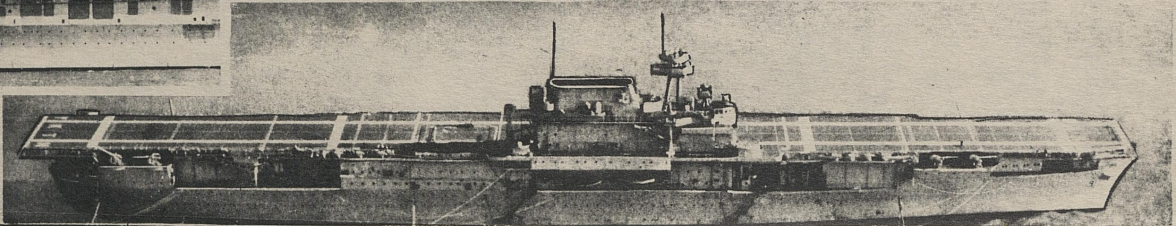
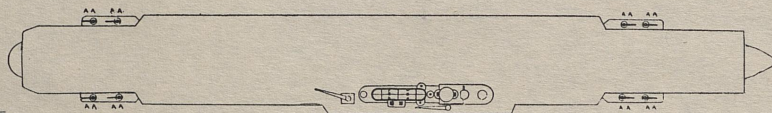
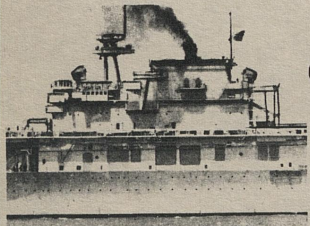
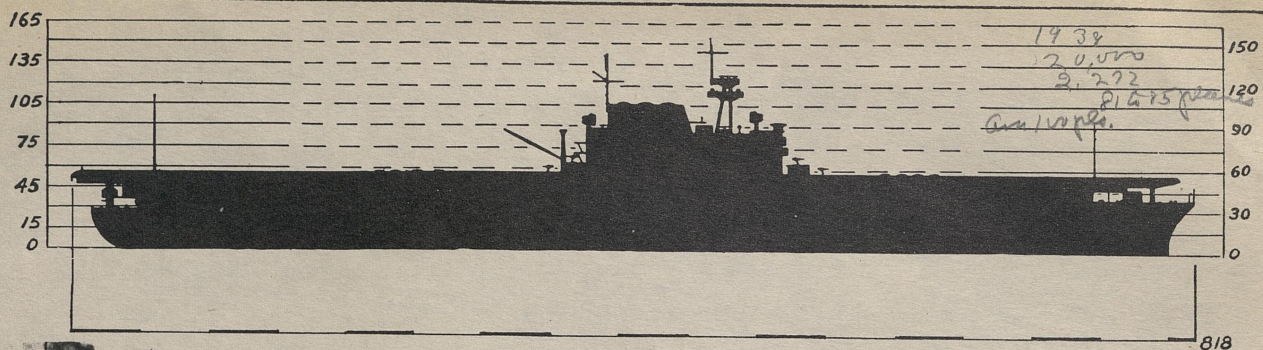
NATIONALITY	JAP	TYPE	B. B.	CLASS	FUSO	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
YAMASHIRO		11 ORLHARD TOWER PURE MAIN. STICK ON TOWER	SIG VERT. SIFT ROUND PHARO SS. P.F. 6	TWIN 2 FORE TWR STK FOR 2 STK 2 TWIN AFT STACK SPLITS 3+4 T.	BROWN DECK CAT. 3 T.	

RESTRICTED



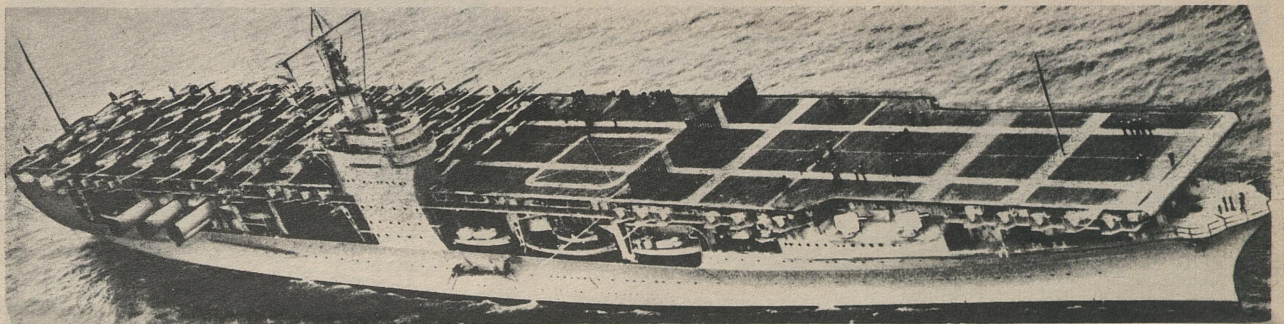
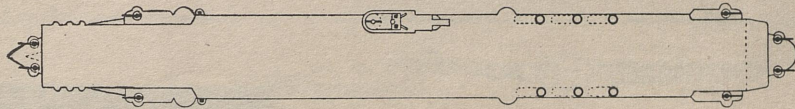
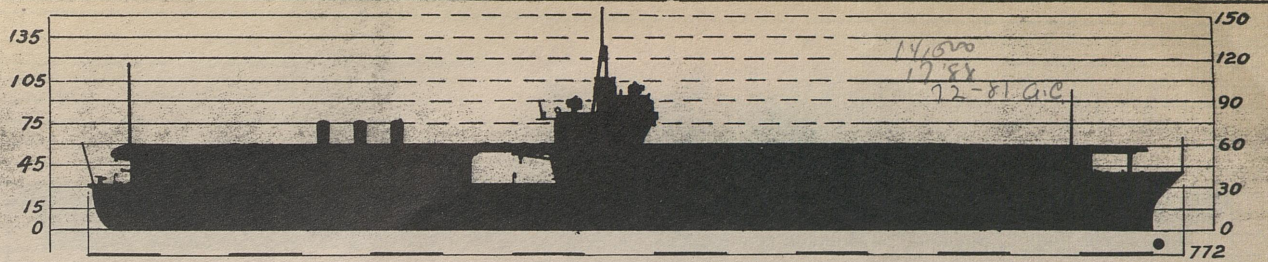
NATIONALITY		JAP	TYPE	B.B.	CLASS	KONGO	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
HIYEI KIRISHIMA		CLUTTERED TOWER TYPED MAIN MAST STICKON TOP	50 VSR MID J. 50 SMALL VSR 11P1 MAIN MAST A PLM SIDED	4 TWIN	BRONZE DECK FIRE CONTROL APTUC SMALL 11P1 STG S.S.P. ON FORE STK		

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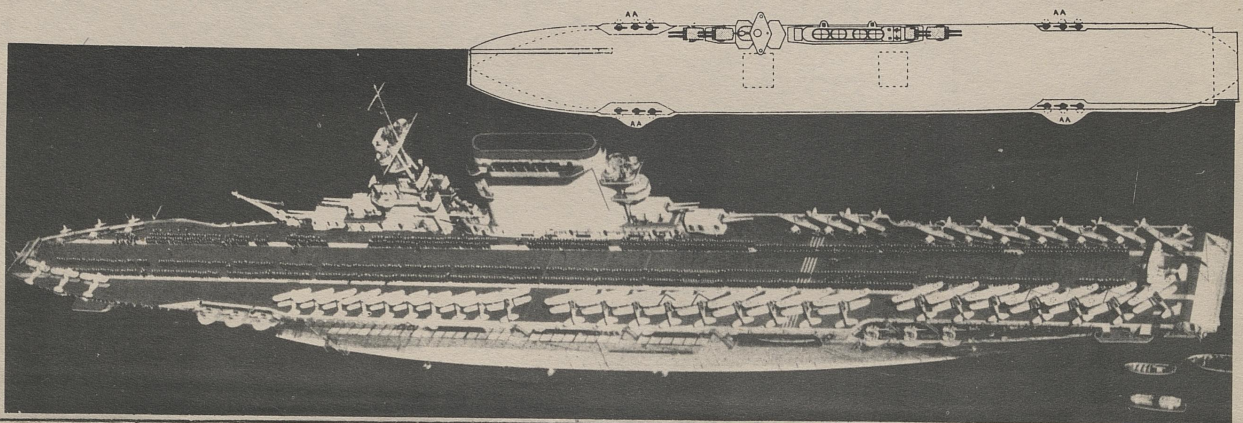
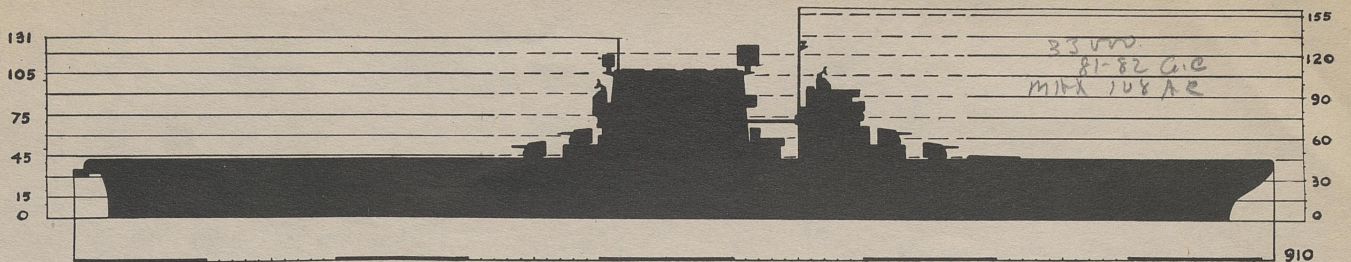
NATIONALITY U.S.		TYPE C.V.		CLASS ENTERPRISE		SERIAL NUMBER 6
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
HORNET - 1941	8	TYP. FURB STICK MAIN	13 BROAD ER THAN TALL	NONE 8-SIN H D W L. P. 16 A.A. Gun	FLIGHT DECK BOW MAST & STACKS COMBINE INTO 1 S.S. STERN EXT.	

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37



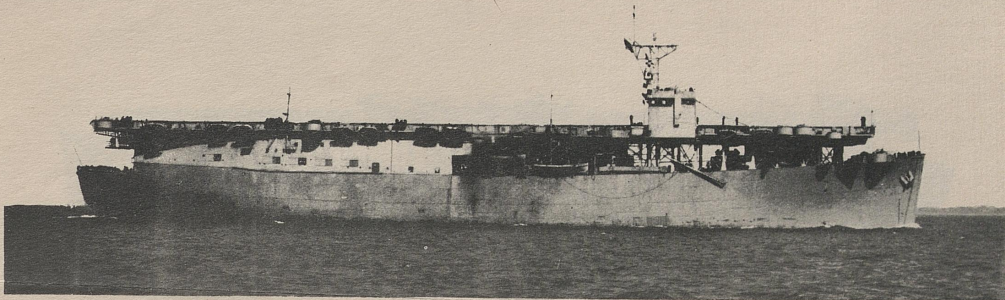
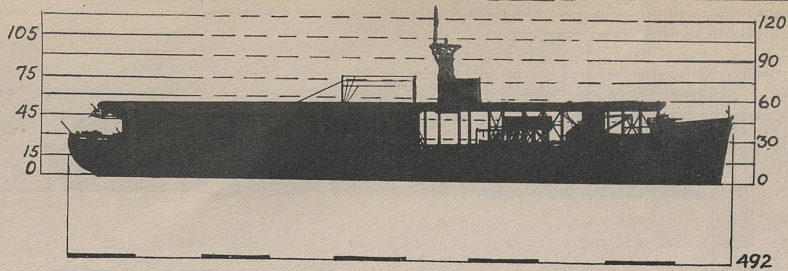
NATIONALITY U.S.		TYPE C.V.	CLASS RANGER 1934	SERIAL NUMBER 4
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS
		THIN TYP MAST ON ISLAND ONLY MAST	6 FOLDING 3 EACH SIDE	NONE 8 5 INCH SEAL H.A. 16 M.G. 24 S. M.C. SCAT AMOR
		OTHER FEATURES		
		FLY. DECK S17 BOW STERN		

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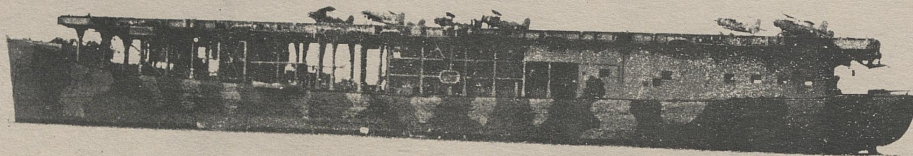
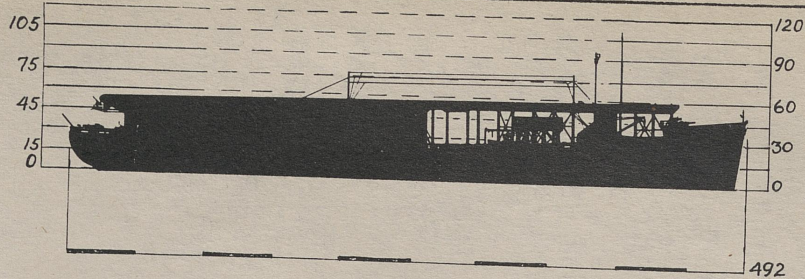
NATIONALITY U.S.		TYPE C.V.		CLASS SARATOGA		SERIAL NUMBER 3
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
		STK FORE MAST + MAIN MAST ON ISLAND	1 TUBE LOWER THAN ST. MAST	2 FORE 2 AFT 8 INH 55 cal m.c. ON STACK + BET. SS. + ST.	FLY. DECK COVERS HULL INCL. RAMP ON STERN I.R. DECK LINE	

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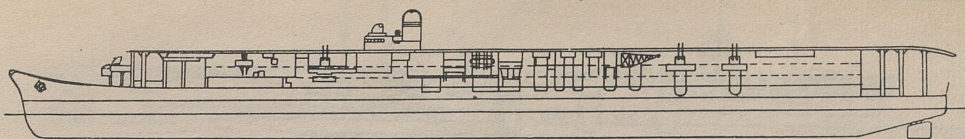
NATIONALITY	U.S.	TYPE	A. V. G.	CLASS	CHARGER	SERIAL NUMBER	30
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
		SMALL ISLAND STERN B-SIDE	100NF	100NF	FLY DECK SHY STERN + BW		

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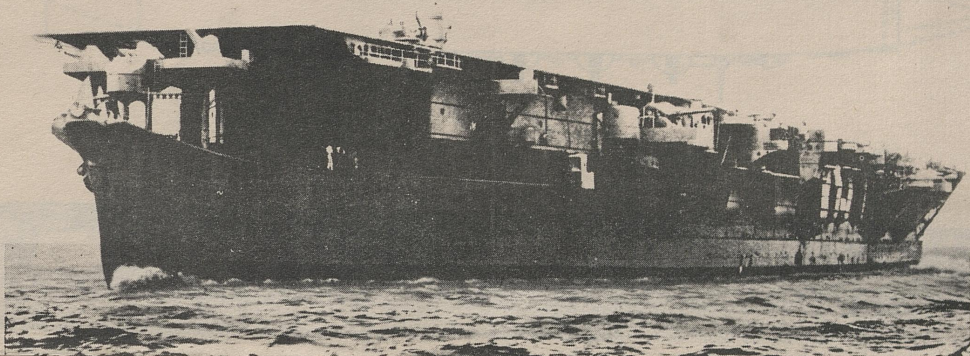


NATIONALITY U.S.		TYPE A.V.G.	CLASS LONG ISLAND		SERIAL NUMBER 1
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
		STICK FORE STICK MAIN	NONE DISEL EX.	NONE	FLT DECK SHT - ST. + Bow

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41

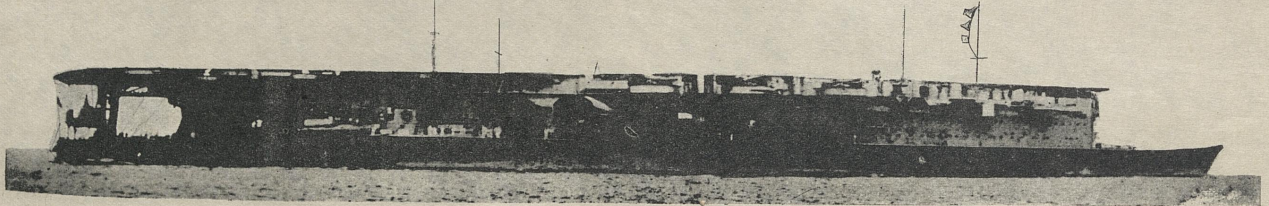
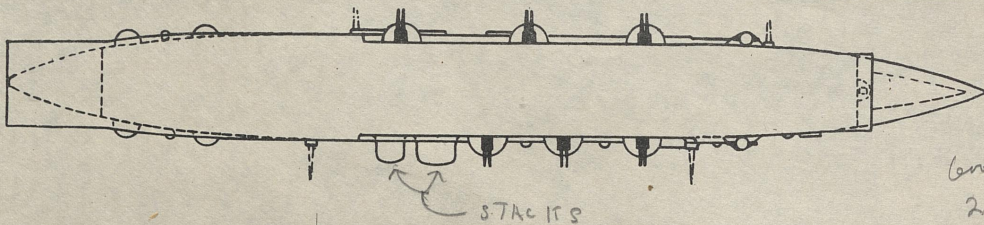
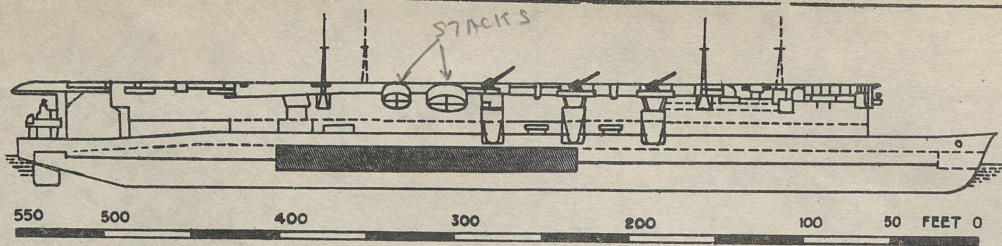


307040 A.C.

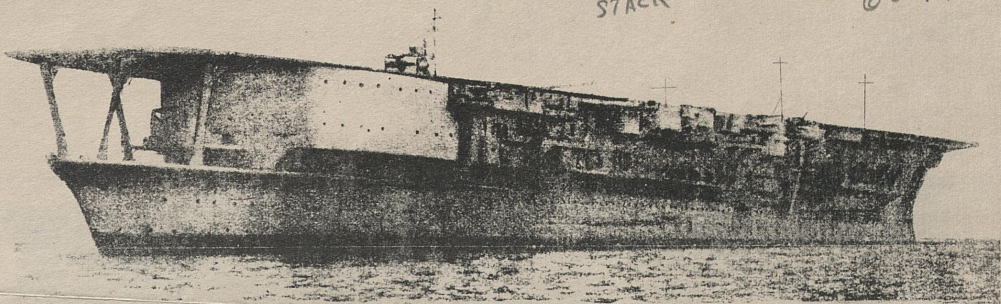
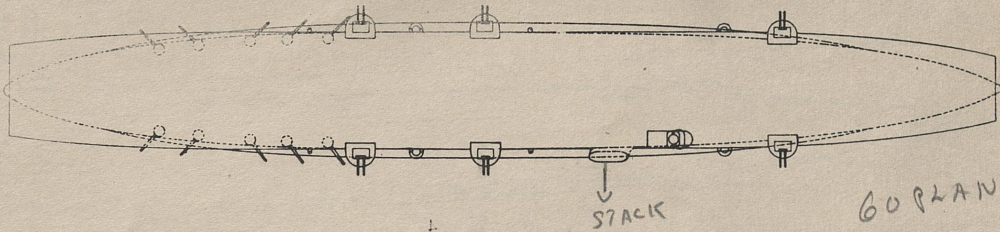
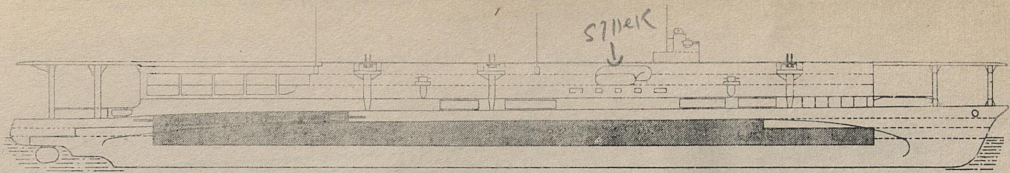


NATIONALITY JAP		TYPE C.V.		CLASS SORYU		SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
HIRYU KORYU		NONE	VERT ISLAND ST.B SIDE	NONE 12-SINCE A.A. 24. MG	1/2 T DECK SHT. OF BOW	

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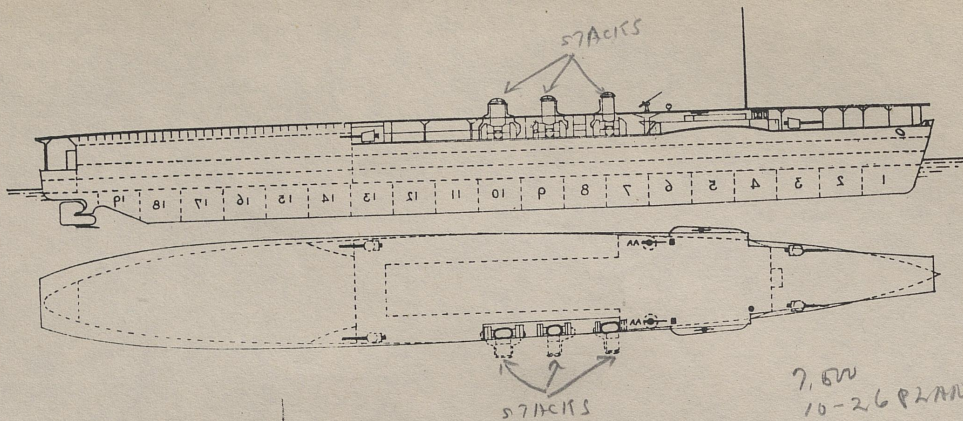


NATIONALITY		JAP.	TYPE	C.V.	CLASS	RYUJO	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
		4 FOLDING STEEL MAST	PT. FUNT. ON PORT SIDE + RACKING MID S. MAST	NONE	12 5 INCH A.A. 24 M.G.		
RESTRICTED							



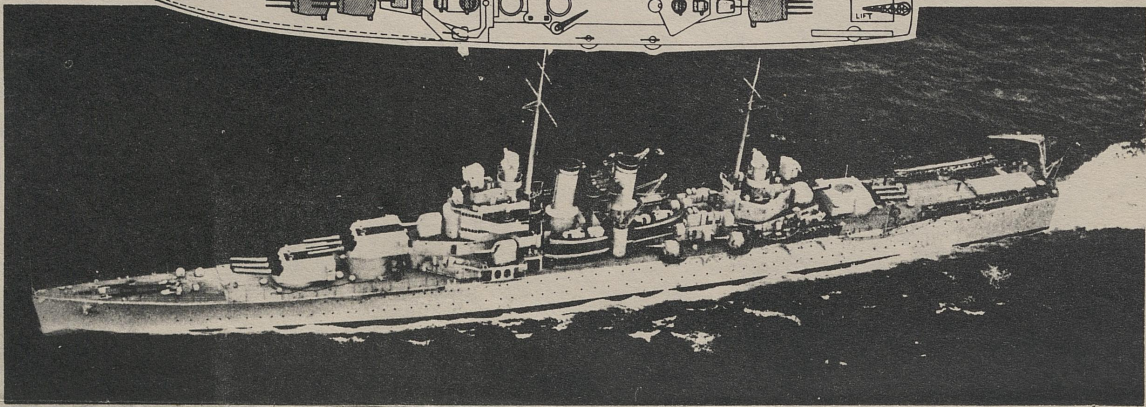
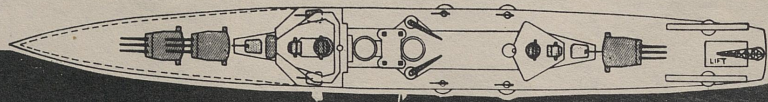
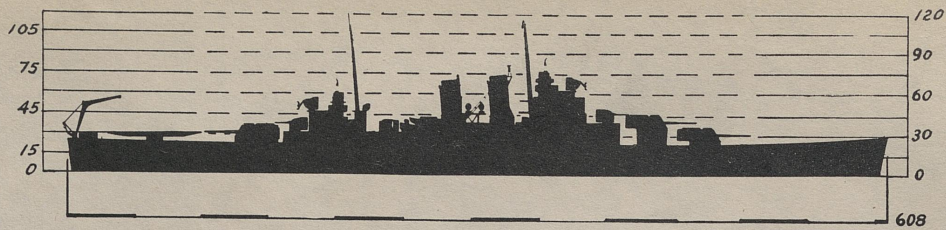
NATIONALITY	JAP	TYPE	C.V.	CLASS	KAGA	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
AKAGI		MODIFIED MAST 4 FOLDING STICKS	1 HOR. ST. B SIDE	NONE 10 8 INCH 12.4 70 INCH AA 28 MG.	PLG. DECK OVER HULL BUILT UP STERN + BOW DIAGONAL BRACES	

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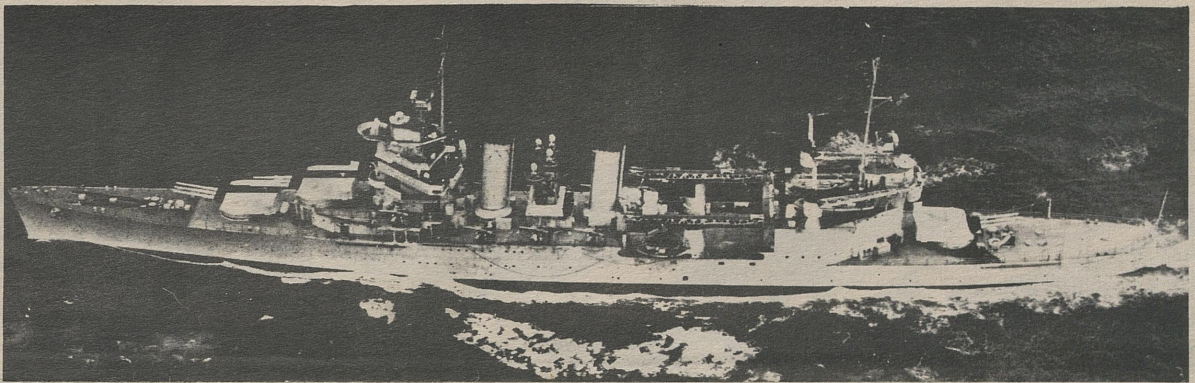
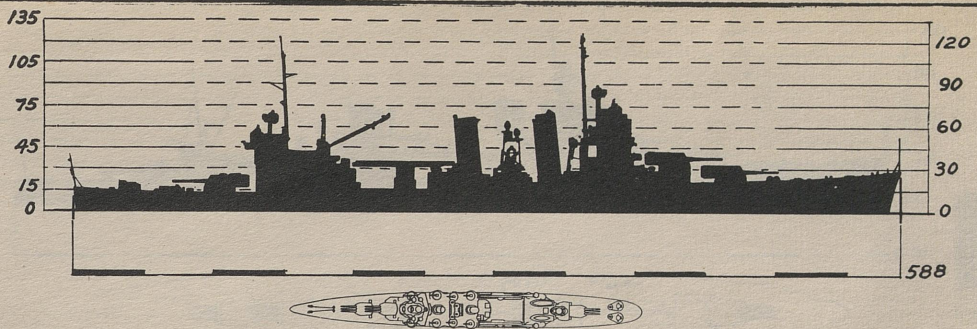
NATIONALITY	JAP	TYPE	C.V.	CLASS	HOSHO	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
		1 FOLDING STICK FORE STARBOARD SIDE	3 VER FOLDING STACKS MIDSHIP STARBOARD SIDE	1 NONE 4-5.5 INCH 5000 2-3 INCH 17 A		

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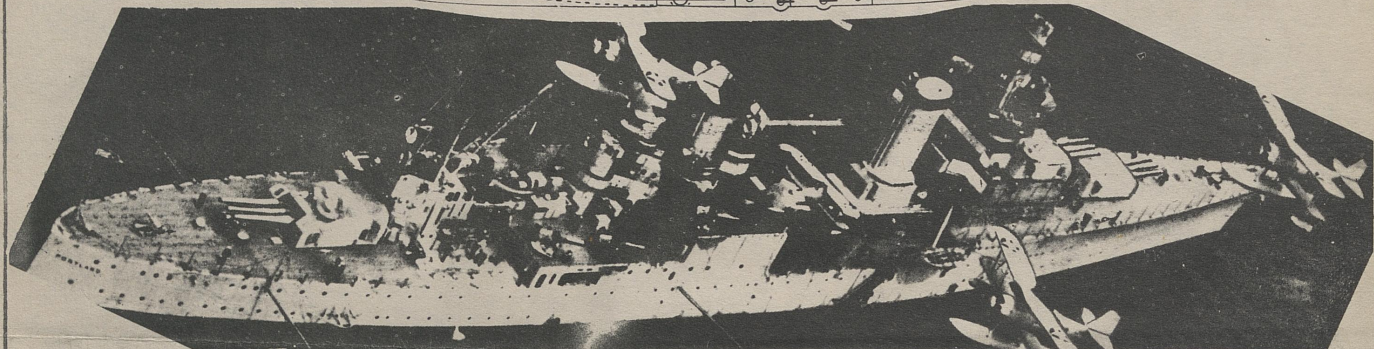
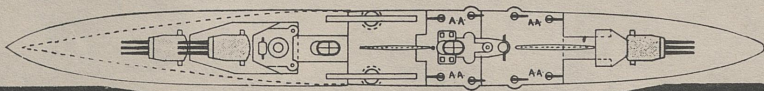
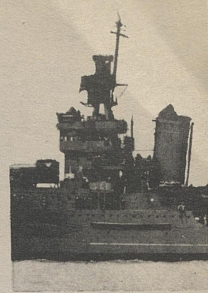
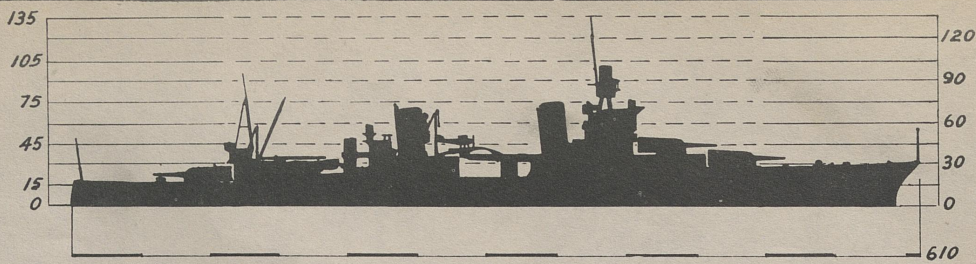
NATIONALITY U.S.		TYPE C.A.		CLASS WICHITA		SERIAL NUMBER 45
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
		STICK FORE " MAIN	2 ROUND, RARING SPACED - CLOSE	37 RIFLES 2 Semiauto Signo turrets Forward & AFT	FLUSH DECK SQ. STERN 2 CAT AFT	

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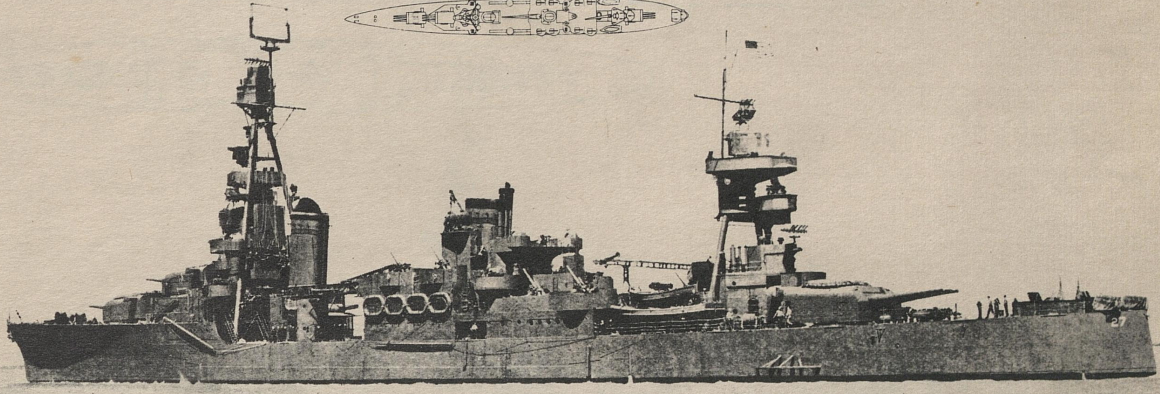
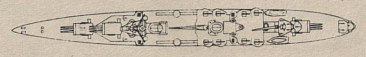
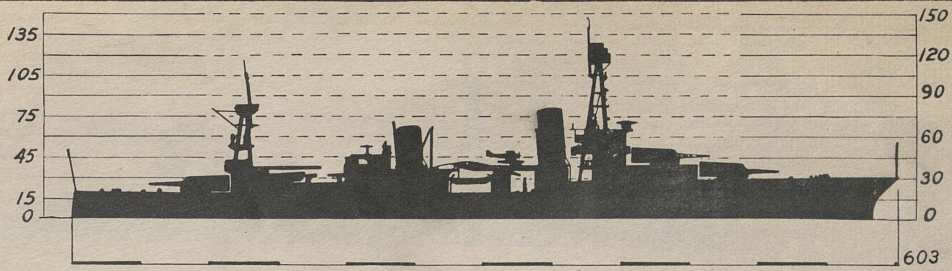


NATIONALITY U.S.		TYPE C.A.		CLASS NEW ORLEANS		SERIAL NUMBER 32
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS		STACKS	TURRETS	OTHER FEATURES
MINNEAPOLIS	36	STICK FORE		2 OVAL RATING	3 TRIPLES	UPPER DECK
TUSCALOOSA	37	STICK MAIN		S.S. PL BFT STRS		LOW PRIZE
SAN FRANCISCO	38					BROAD AFT
EX-ASTORIA CLASS						2 CAT 13127 MAIN + AFT STR

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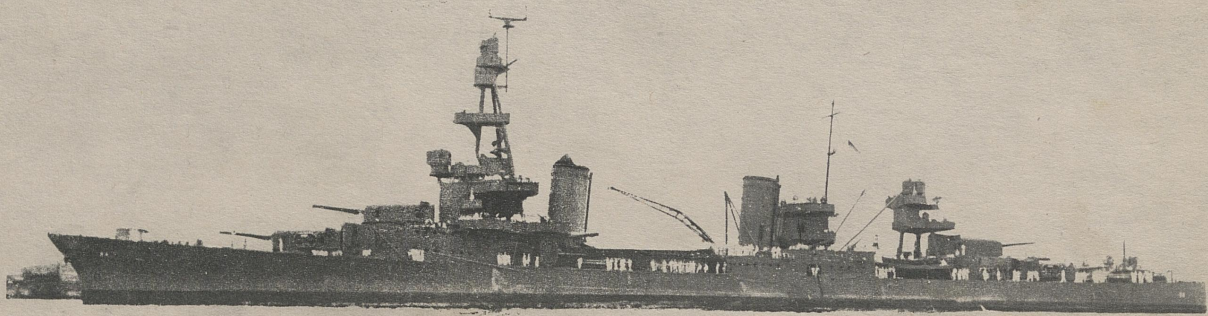
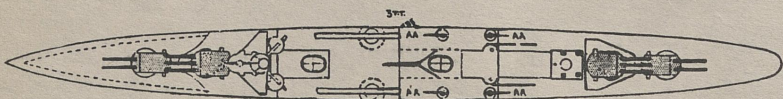
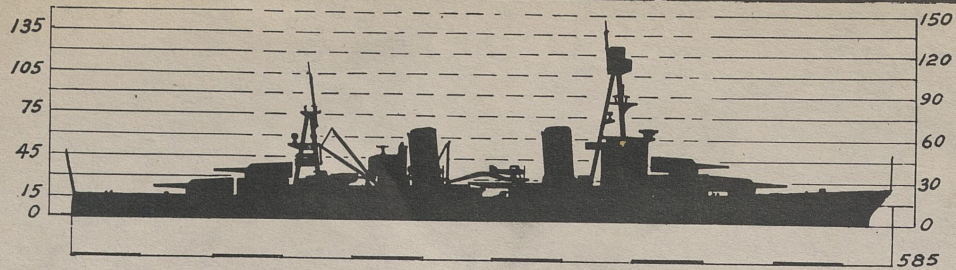


NATIONALITY U.S.		TYPE C.A.		CLASS PORTLAND		SERIAL NUMBER 33	
OTHER SHIPS IN CLASS	SERIAL NO.	MAST	STACKS	TURRETS	OTHER FEATURES		
INDIANAPOLIS	35	TRIPUD FORE SLIM TRIPUD MAIN	2 FAT SIDED RAKING NO 2 SHOTONISH	3 TRIPLES 2 TWIPLES	BRU KEN DECK		
RESTRICTED							



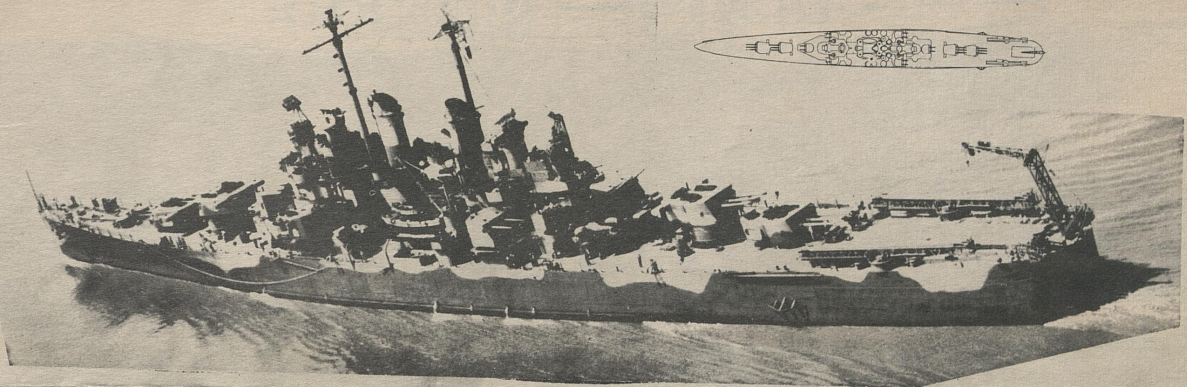
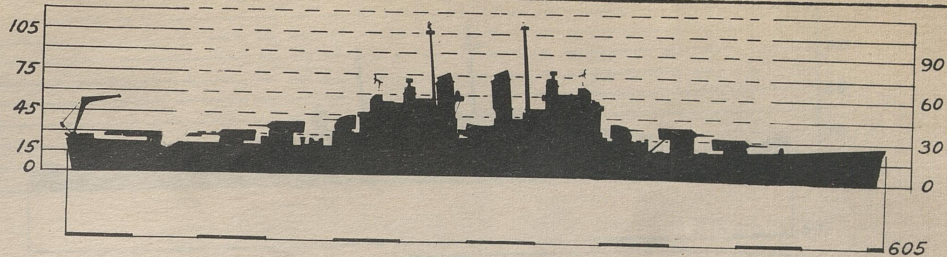
NATIONALITY U.S.		TYPE C.A.	CLASS NORTHAMPTON	SERIAL NUMBER 26	
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
CHESTER	27	TRIPUD FURIE	2 BARRING	3 TRIPLES	BROKEN DECK
LOUISVILLE	28	TRIPUD MAIN-LOW	#1 FLAT SIDED		CAT-BET STKS
CHICAGO	29		#2 OVAL		
AUGUSTA	31				

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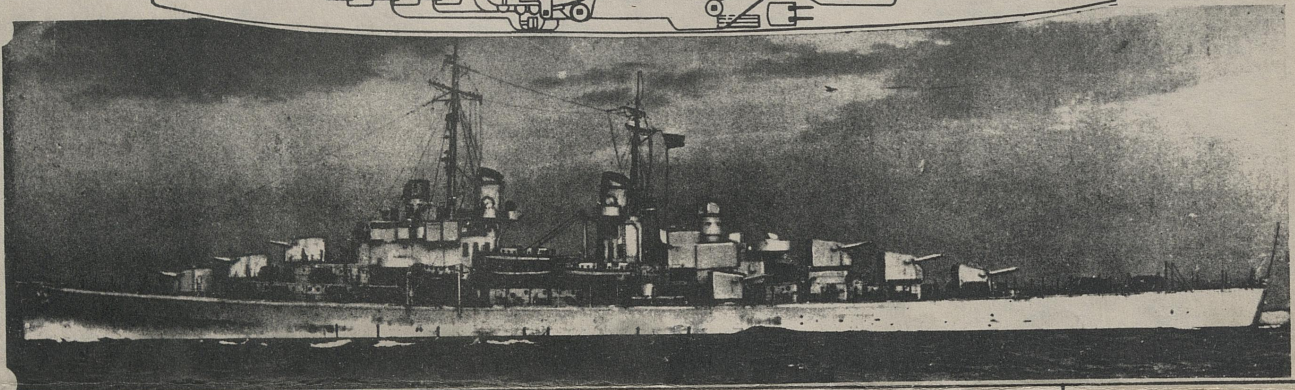
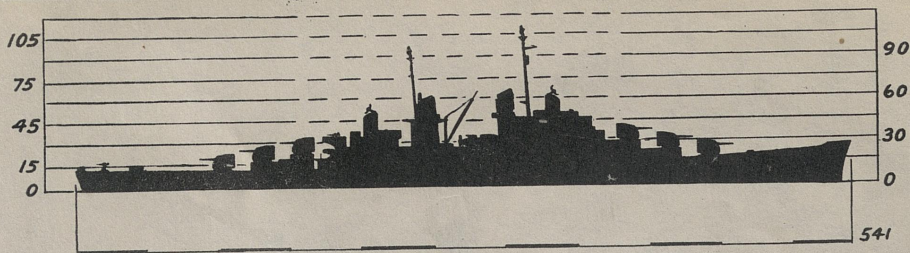
NATIONALITY	U.S.	TYPE	C.A.	CLASS	PENSACOLA	SERIAL NUMBER 24
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
SALT LAKE CITY	25	TRIPOD FORE TRIPOD MAIN LW	2 FLAT SIDED RACKING	4 TURRETS 2 TWINS 2-TAI 2-3 3-2	FLUSH DECK	

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50



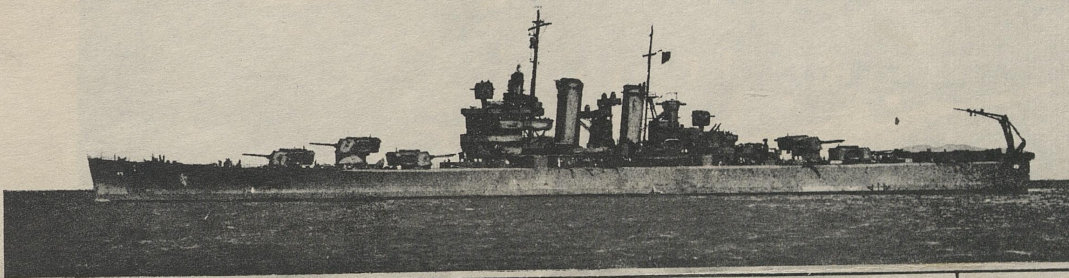
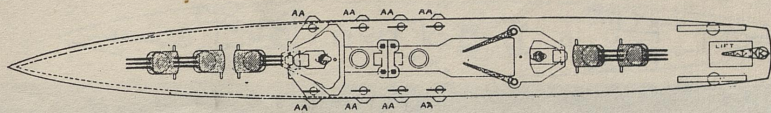
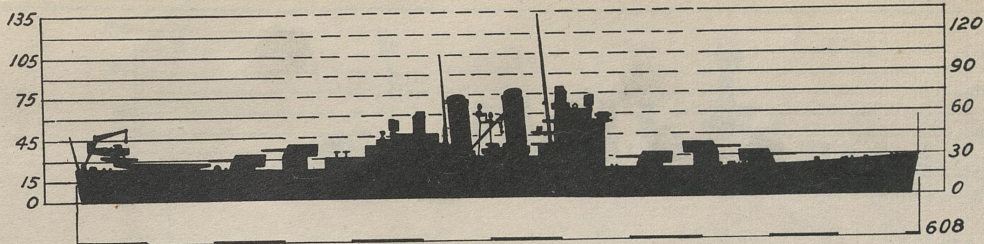
OTHER SHIPS IN CLASS		SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
COLUMBIA	56	STICK FORE	2 FLAT SIDED CLOSELY SPACED	4 TRIPLES 1 TWIN AFT FORE	ROUNDED UR SQ 2 CATS UN QT. DECK	
MONTPELIER	57	STICK MAIN				
DENVER	58					
SANTE FE	60					
UP TO 100						

RESTRICTED
51



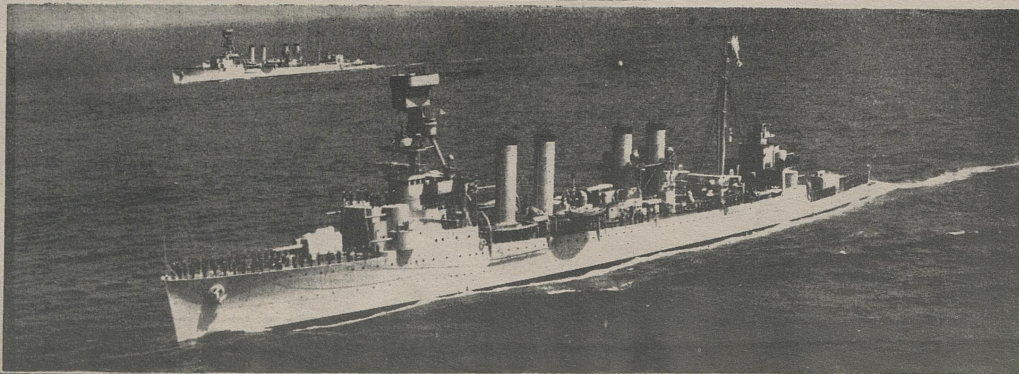
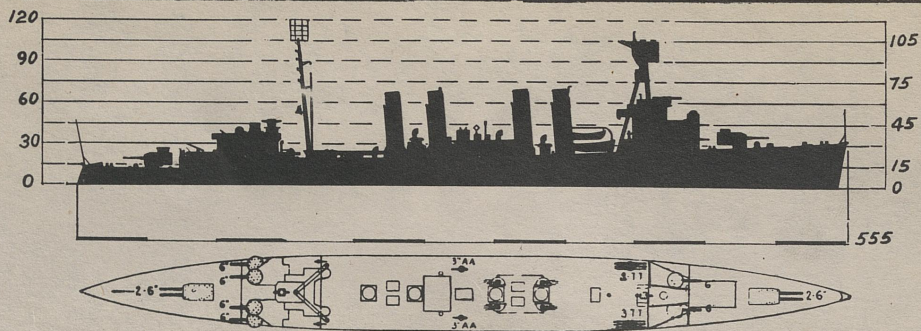
NATIONALITY U.S.		TYPE C.L.	CLASS ATLANTA	SERIAL NUMBER 51	
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
JUNEAU	52	STICK FORE	2 ROWING RAKING CLOSE	8 TWIN S	FLUSH DECK SQ-STERIU 11'-130W
SAN DIEGO	53	STICK MAIN			
SAN JUAN	54				
OAKLAND	95				

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52



NATIONALITY U.S.		TYPE C.L.	CLASS	BROOKLYN	SERIAL NUMBER 40
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
PHILADELPHIA	41	STICK FOUR	2 ROUND	5 TRIPLES	FLUSH DECK
SAVANNAH	42	STICK MAIN	RAILING CLOSE	3 FOUR 2 APT	SP STERN
NASHVILLE	43				2 CH UT DECK
PHOENIX	46				CRANE STERN
BOISE	47				
HONOLULU	48				

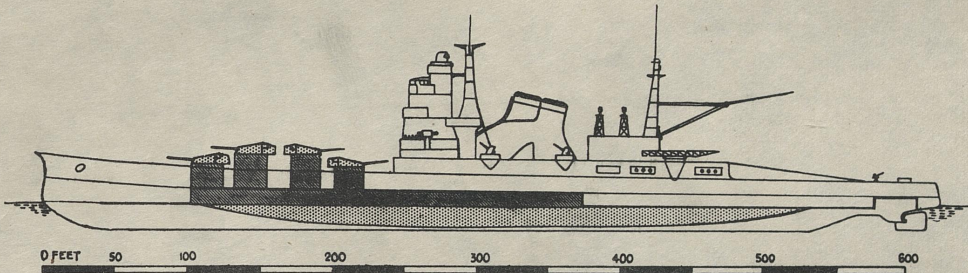
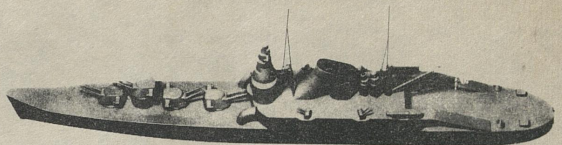
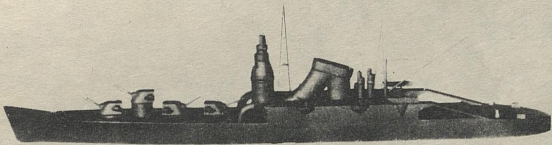
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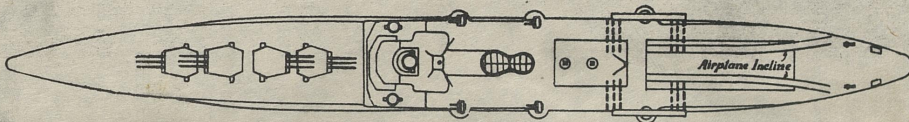
NATIONALITY		U.S.	TYPE		C.L.	CLASS	OMAHA	SERIAL NUMBER	4
OTHER SHIPS IN CLASS		SERIAL NO.	MASTS		STACKS	TURRETS	OTHER FEATURES		
MILWAUKEE	MEMPHIS	5	TRIPPOD FORE		4 ROUND SLIGHTLY BACKING	2 TWINS	WAPPE D DECK LOW FREE BORD AFT		
CINCINNATI		6	MAIN STICK						
RALEIGH		7							
DETROIT		8							
RICHMOND		9							
CONCORD		10							
TRENTON	11								

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From O.N.I.-42, Page 22y.

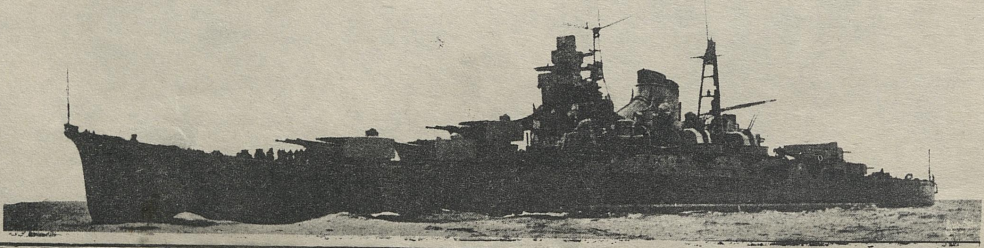
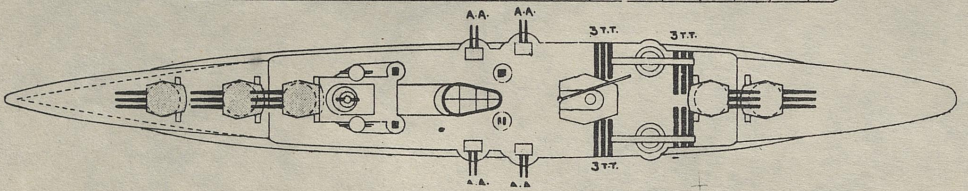
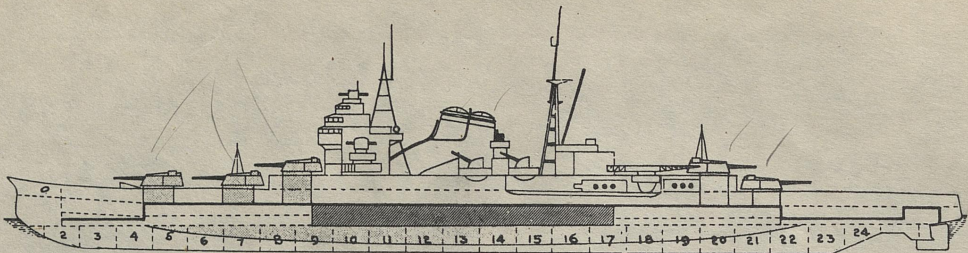


From Jane's "FIGHTING SHIPS", 1941. Page 301



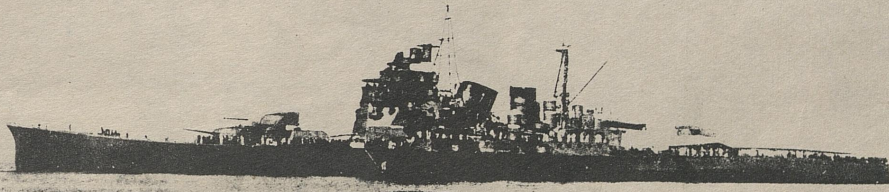
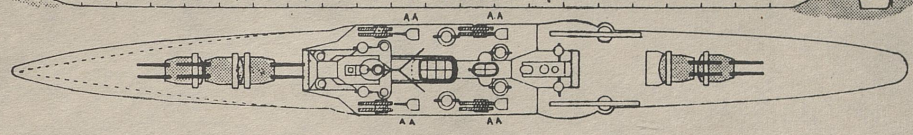
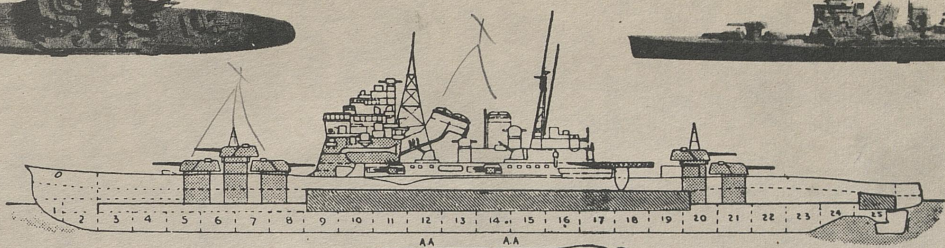
NATIONALITY	JAP	TYPE	C.A.	CLASS	TONNE	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
CHIKUMA		PYLON (7 FT IN 4 LEGS) TRIPPOD MAIN	1 Combination Racking	4 Triple or twin Foreward 6.1 INCH 12 21 inch T.T.	FLUSH DECK AIRPLANE INCLINE AFT 2 SL. PF FURE MAIN MAST 6 planes	

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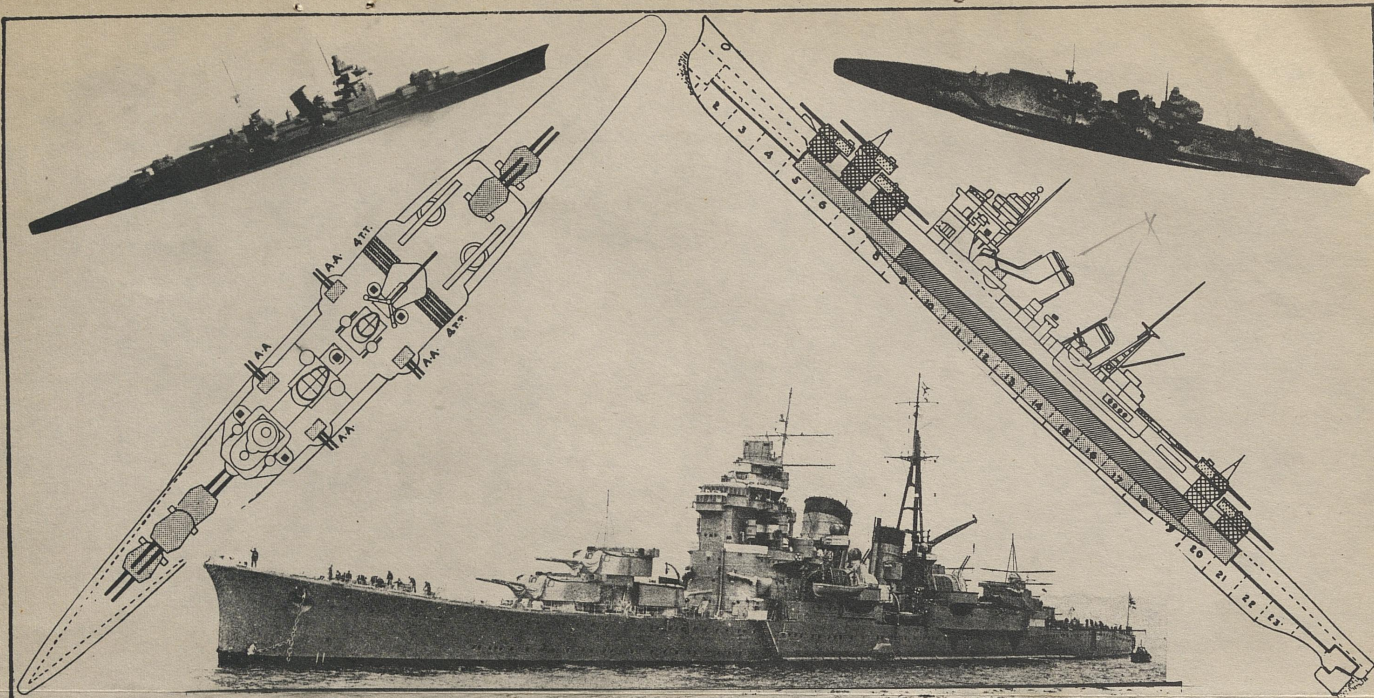
NATIONALITY		JAP	TYPE	C.A.	CLASS	MOGAMI	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS		STACKS	TURRETS	OTHER FEATURES	
MIKUMA SUZUYA KUMANO		Slim Tripod " " MAIN		10 unbracketed BRACKETING	5 TRIPLES in TWINS 3 FORTH + 2 AFT	LARGE CENTRAL ISLAND CONCAVE FURF PROFILE	

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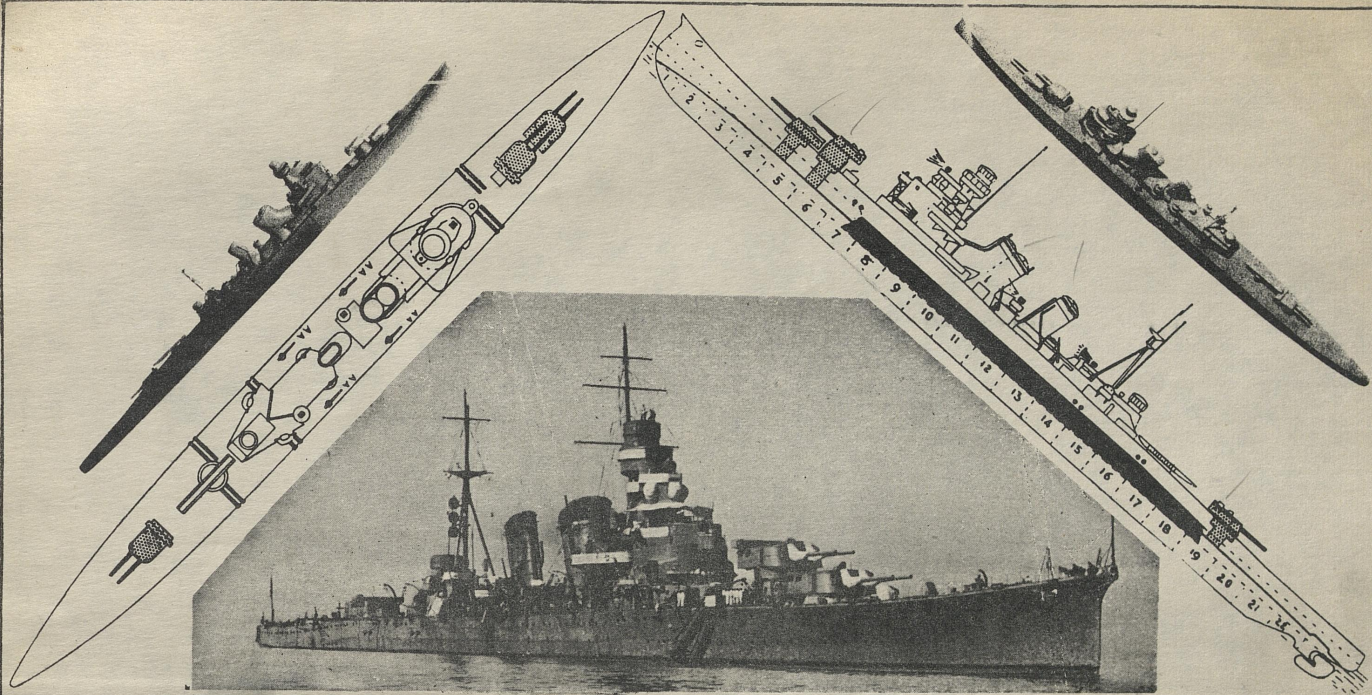
NATIONALITY	JAP	TYPE	C.A.	CLASS	ATAGO	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
TAKAO CHOKAI MAYA		SLIM TRYPPOD " " MAIN	2 #1 COMBINATION RACKING #2 SG VERTICAL	5 TWINS 3 FORD 2 AFT Low hi Low hi Low		

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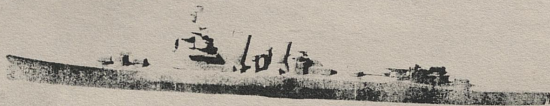
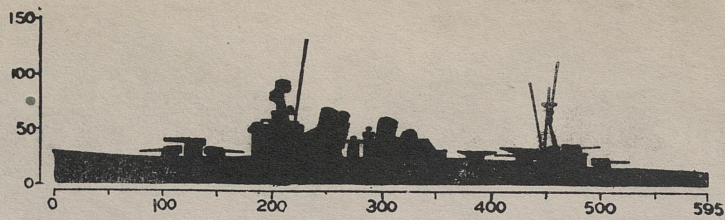
NATIONALITY	JAP	TYPE	C.A.	CLASS	NACHI	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
HAGURO MYOKO ASHIGARA		STICK FORE SLIM TRIPUD	2 RAKING #1 <i>combination racking</i> #2 SL RACKING VERTICAL	5 TWINS 3 FORE 2 AFT L.H. L - H.L	CONCAVE PROFILE	

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NATIONALITY		JAP	TYPE	C.A.	CLASS	KINUGASA	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS		STACKS	TURRETS		OTHER FEATURES
A OBA		STICK FOUR TRIPOD MAIN		2 RACKING #1 combuster #2 SC. VER.	3 TWR 2 FURK. 1 AFT		FLUSH DECK WAVEY DECK LINE

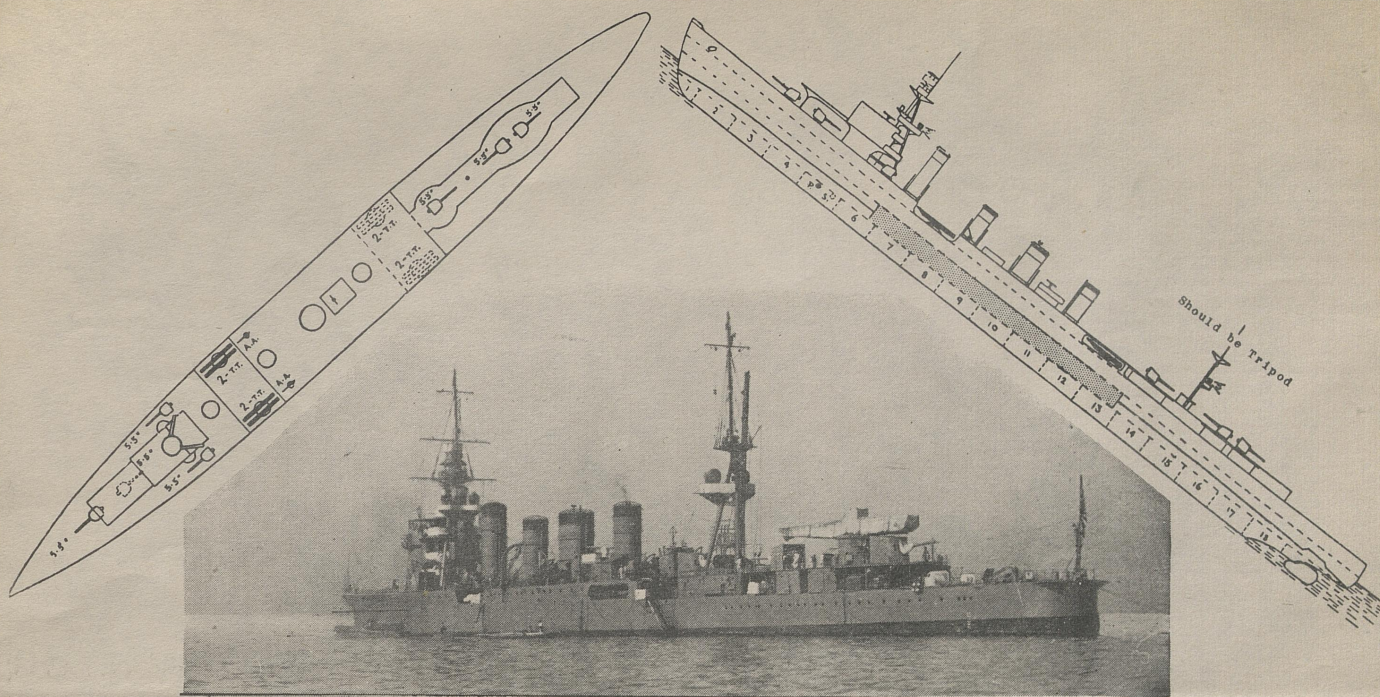
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KAKO MODERNIZED SIMILAR TO KINUGASA

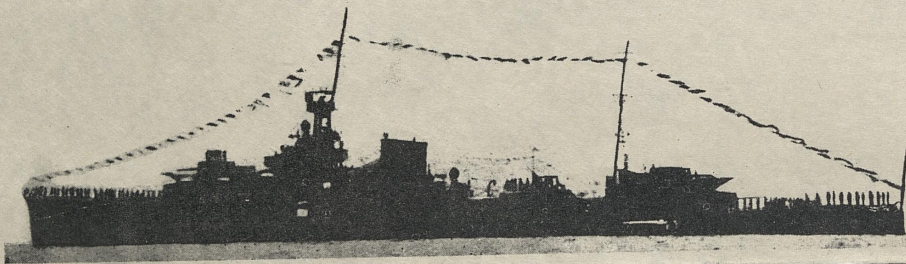
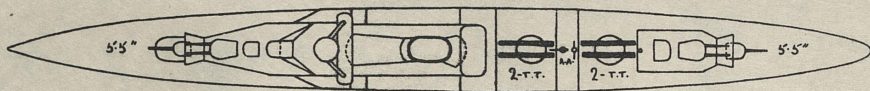
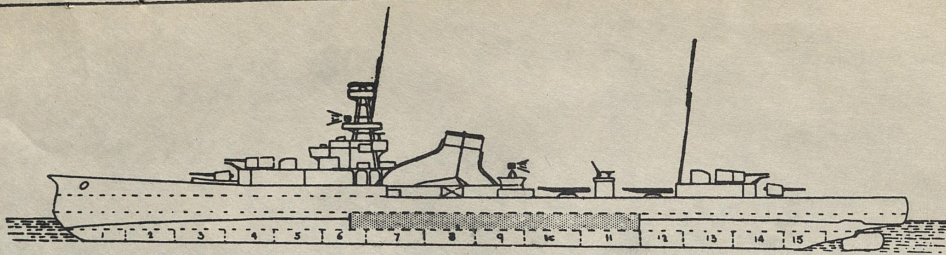
NATIONALITY JAP		TYPE CA		CLASS KAKO		SERIAL NUMBER	
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
FURUTAKA		STICK FORE TRIPUD. MAIN	2 #1 COMBINATION RICKING THICK #2 S ^g FLAT SIDE RACKING	6 Single L.H.L. FORE FORE MAIN MAST 2 AFT H.L.	WAVY DECK LINE CAPLAT FORE #3 TURRET		

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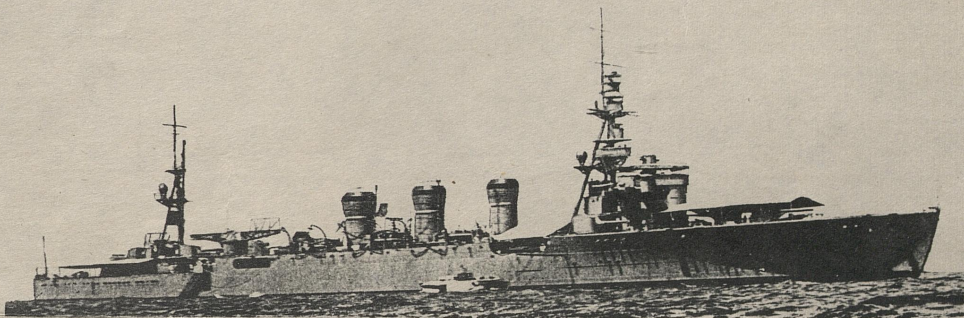
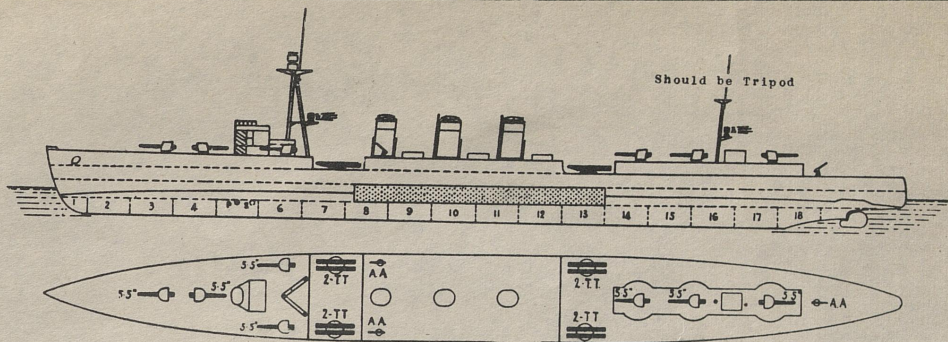
NATIONALITY JAP		TYPE C.L.	CLASS JINTSU	SERIAL NUMBER	
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
NAKA SENDAI		TRIPUD FORE TRIPUD MAIN	4 ROUND ASS. VER.	7 LN PROTECTED SIG.	

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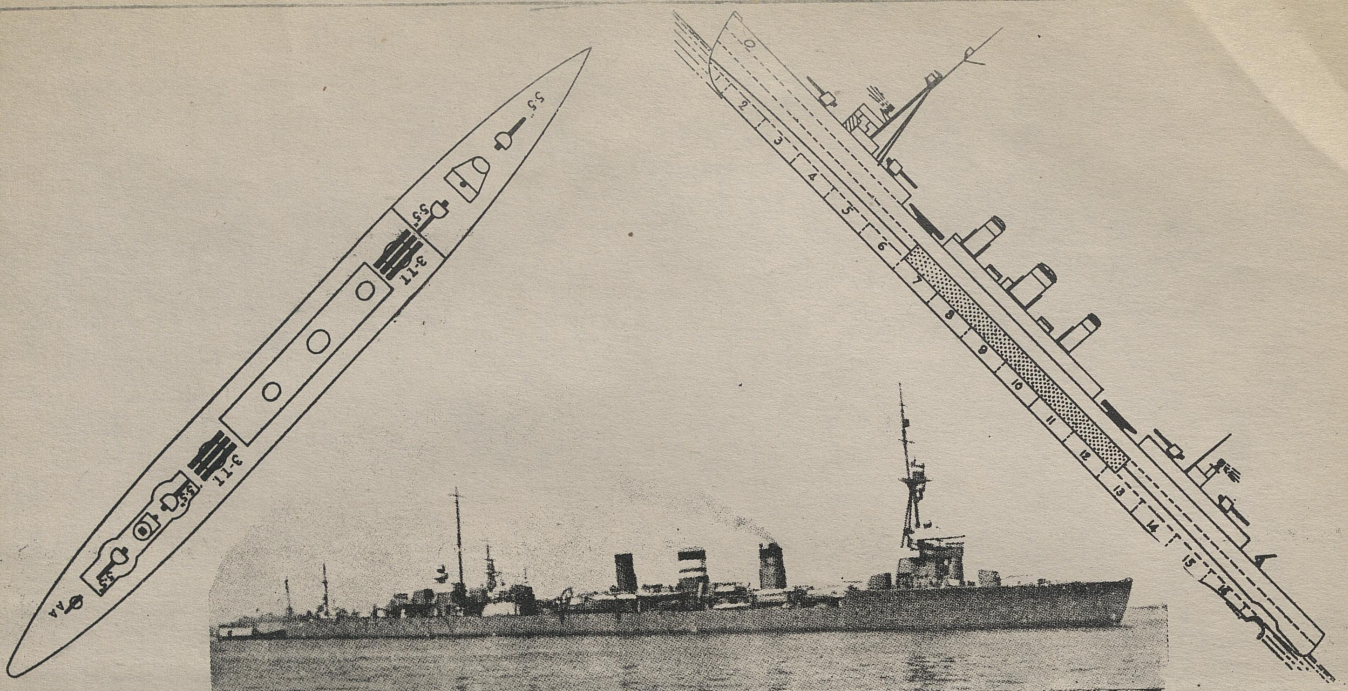
NATIONALITY		JAP	TYPE	C.L.	CLASS	YUBARI	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS			STACKS	TURRETS	OTHER FEATURES
		TRIPOD MAST STICK AHEAD STICK AFT			1 WIDE COMB. RACKING STACK	4 - 2 860 - 2 Twin 1(S) - 1(T) 1(T) 1(S)	FLYING DECK

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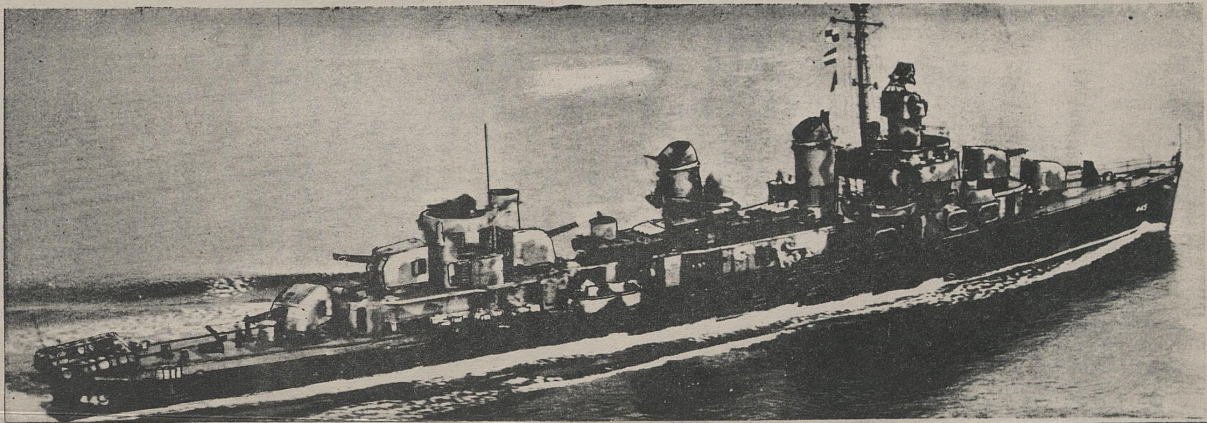
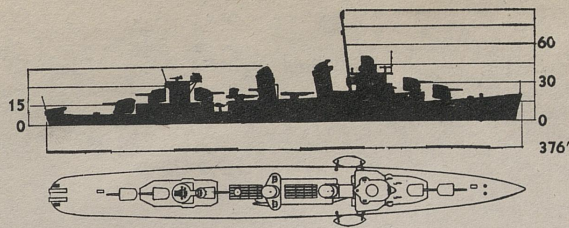
NATIONALITY	JAP	TYPE	C.L.	CLASS	NATORI	SERIAL NUMBER
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
ISUZU KINU YURA NAGARA ABUKUMA		TRIPOD FORE SLIM TRIPOD MAIN	3 OVAL VERT.	7 SIG	CAT FORE MAIN MAST	

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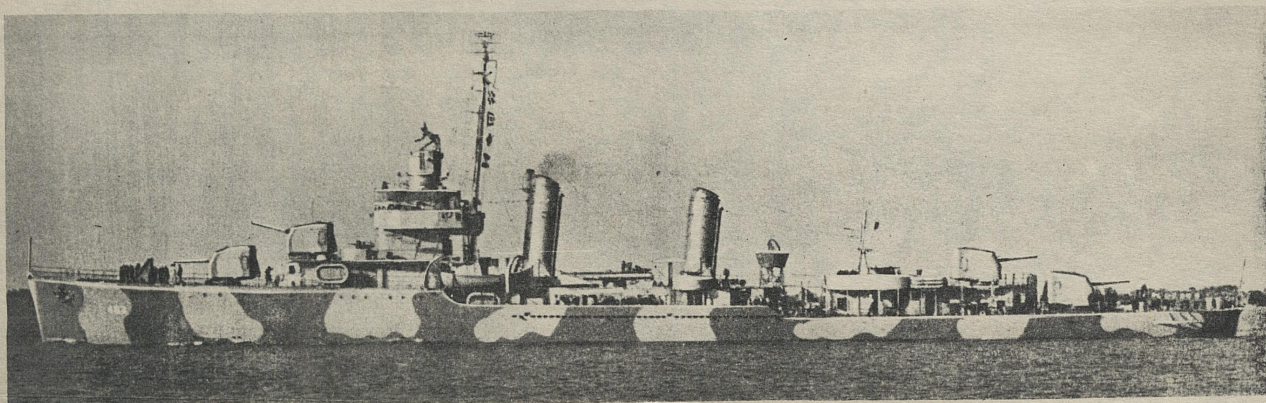
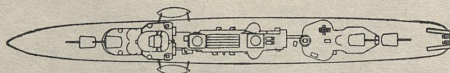
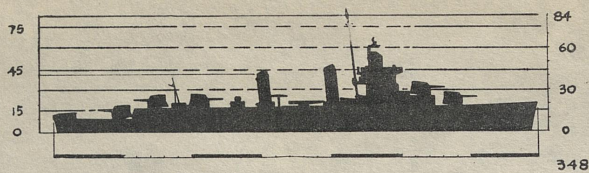
NATIONALITY	JAP	TYPE	C.L.	CLASS	TENRYU	SERIAL NUMBER	
OTHER SHIPS IN CLASS		SERIAL NO.		MASTS		STACKS	
			THIN TRIPUD FORE STICK MAIN	3 OVAL VERT ODD DIA.	4 SG - - - -		2 DECK WELLS BRITISH DECK

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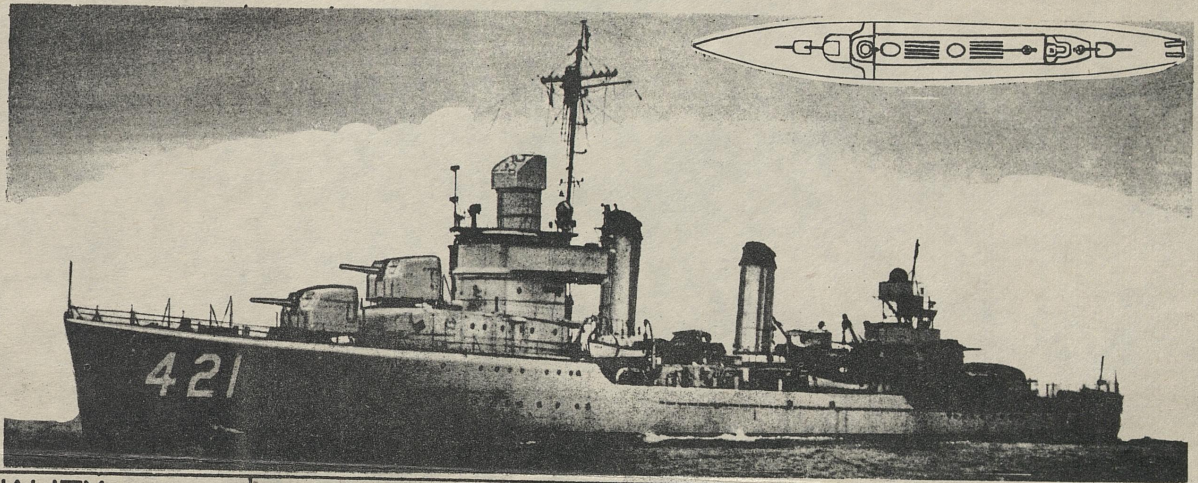
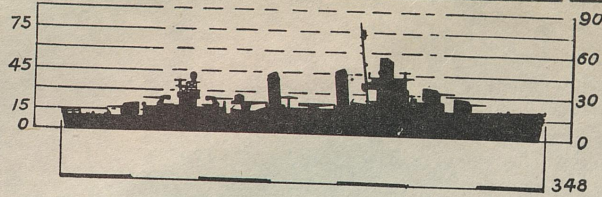
NATIONALITY U.S.		TYPE D.D.		CLASS FLETCHER		SERIAL NUMBER 445			
OTHER SHIPS IN CLASS		MASTS		STACKS		TURRETS		OTHER FEATURES	
MOST DD'S FROM 445 TO 644 EXCEPT THOSE IN THE BRISTOL CLASS		STICK FORE LOW STICK MAIN		2 RIGGING		3 SG T. 2 FORE / FORE MAIN MAST 2 AFT			

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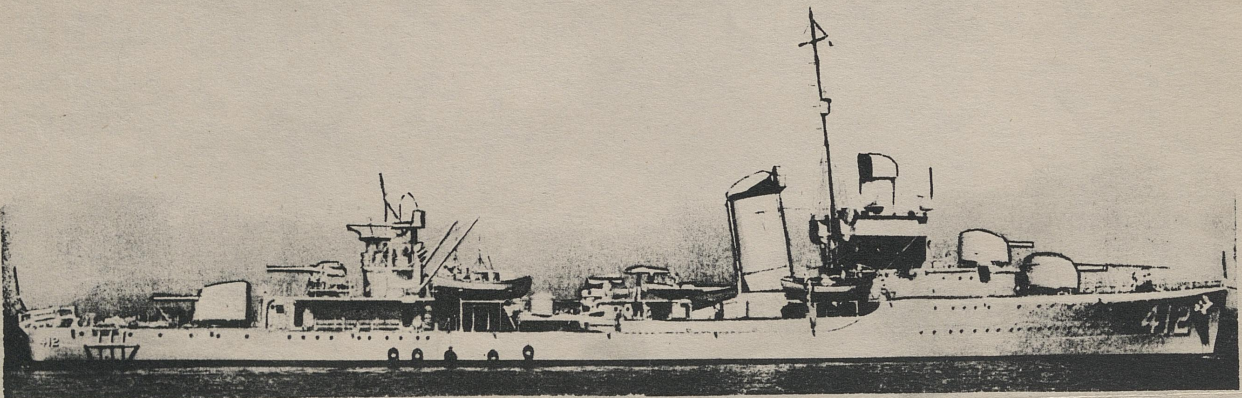
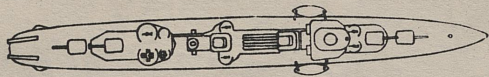
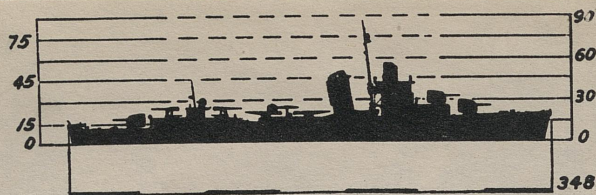
NATIONALITY U.S.		TYPE D.D.	CLASS BRISTOL	SERIAL NUMBER 453	
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
DD'S 453-628, 632-641, 645-648		STICK FORE LOW TRIPOD MAIN	2 RH KING HI	4 SG 2 PUR 2 AFT	PRO-BROWN DIECAST LOW 1-A B AFT

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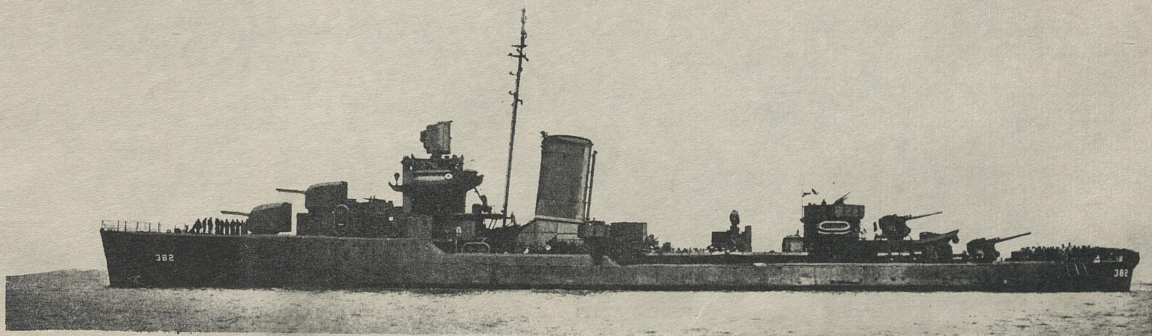
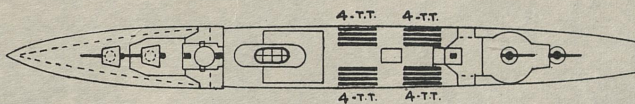
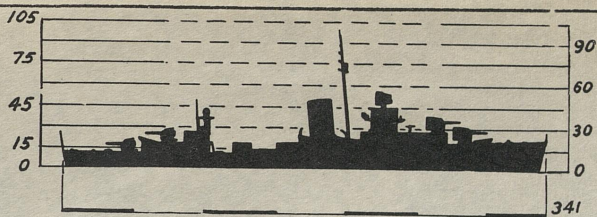
NATIONALITY U.S.		TYPE DD		CLASS MAYO (Benson)		SERIAL NUMBER 422					
OTHER SHIPS IN CLASS		SERIAL NO.		MASTS		STACKS		TURRETS		OTHER FEATURES	
421-444				STICK MAST ABFT CUNNING TOWER		2 RACKING ST. FARNPAT 11'		3 RD 2 ND 1 APT			

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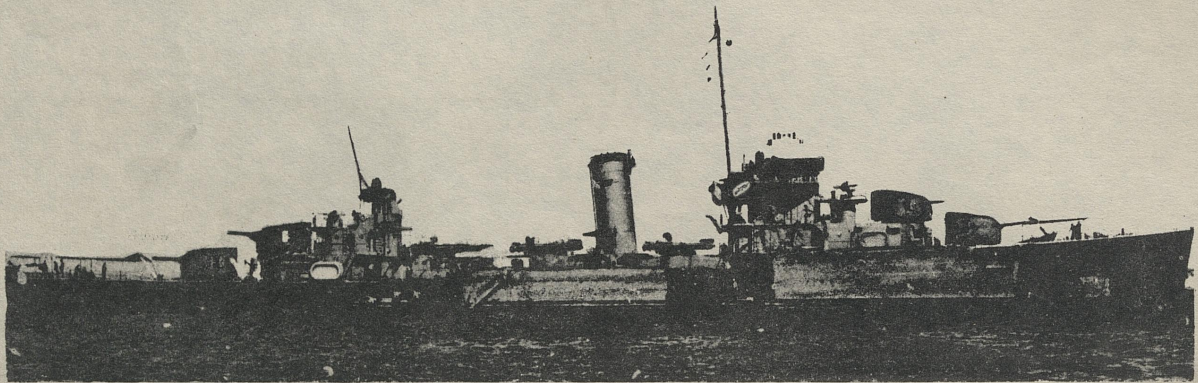
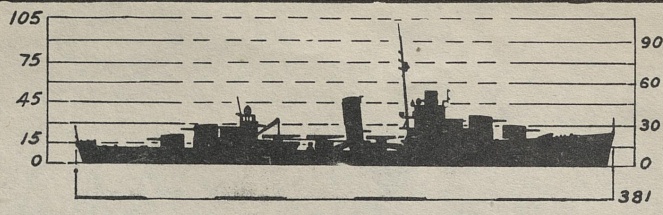
NATIONALITY	U.S.	TYPE	D. D.	CLASS	SIMS	SERIAL NUMBER	409
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
DD 409-420		STICK ABAT COM TOWER	1 RIGGING	4 - Single 2 - RH-7			

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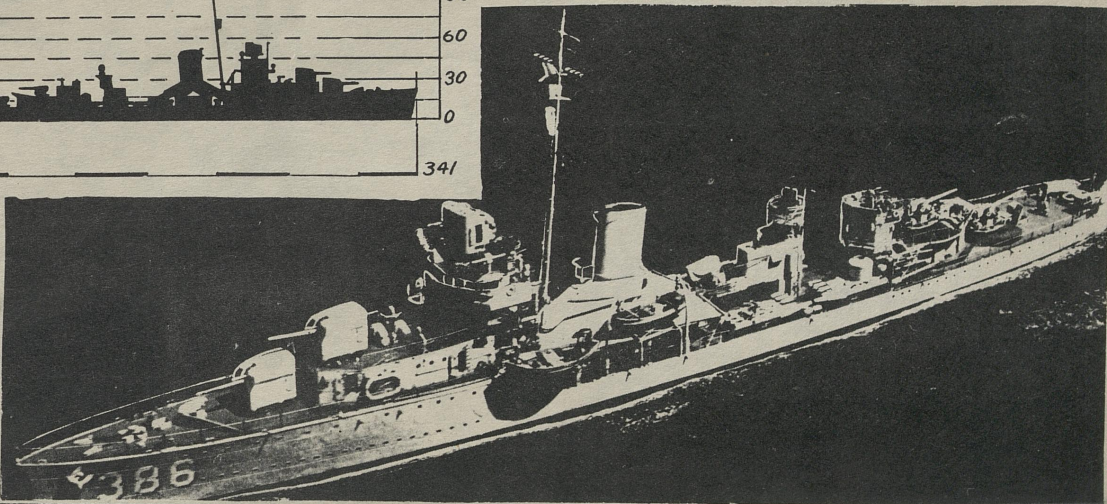
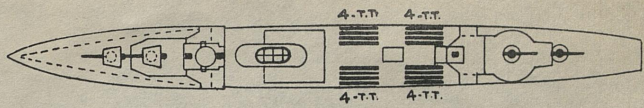
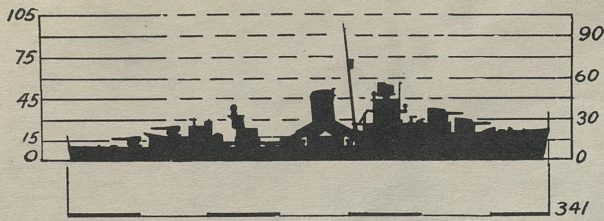
NATIONALITY	US	TYPE	DD	CLASS	McCALL	SERIAL NUMBER	400
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES		
380, 382, 397-408		5-TICK MAST 1/2 CUM. T. ST.	56 RACKING	2 56 T. BULK FURD 2 DECK GUNS AFT			

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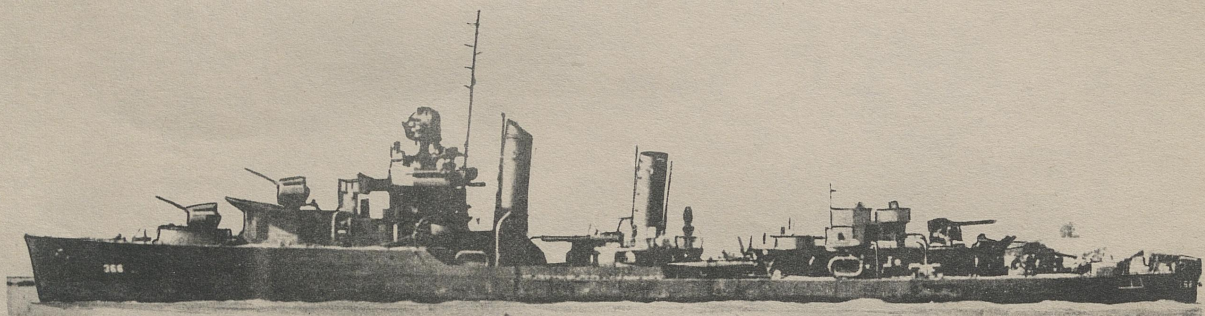
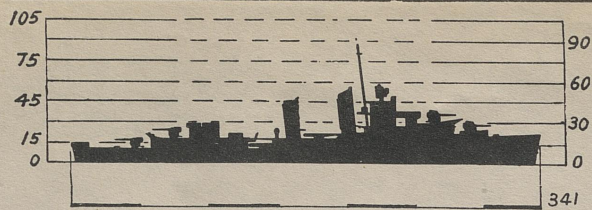
NATIONALITY U.S.		TYPE DD		CLASS WARRINGTON		SERIAL NUMBER 383	
OTHER SHIPS IN CLASS		SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
381, 383, 394-396			STICK A BAPT CIV. T.	1 FUNNEL	4 TWINS 2 FUR 2 APT		

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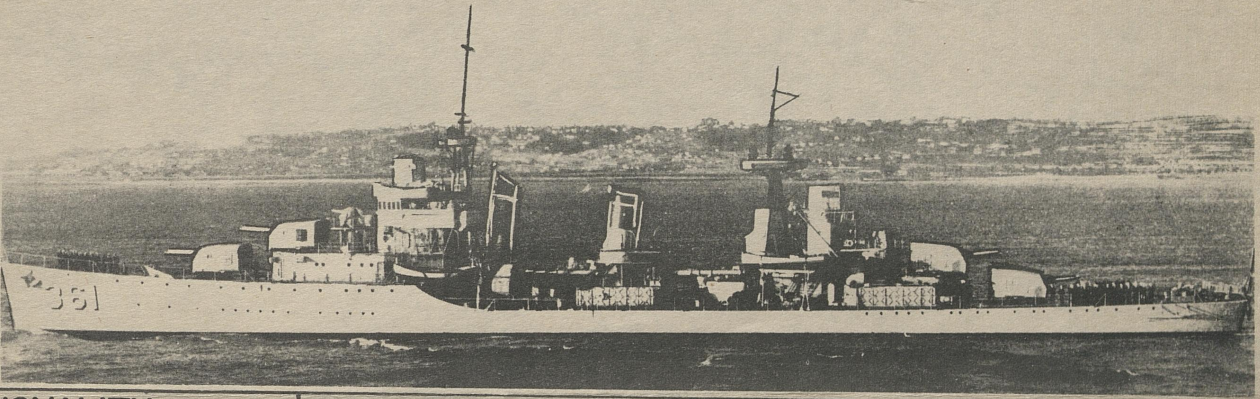
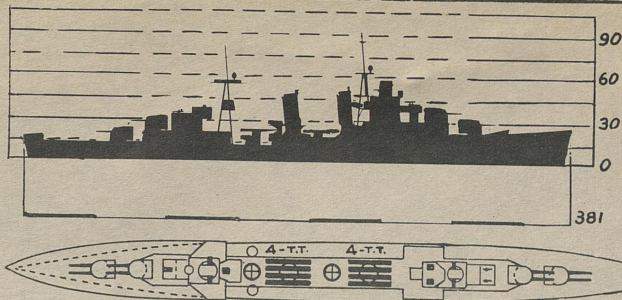
NATIONALITY U.S.		TYPE D.D.		CLASS BLUE		SERIAL NUMBER 387			
OTHER SHIPS IN CLASS		MASTS		STACKS		TURRETS		OTHER FEATURES	
DD 386-393		STICK FORE		INVERTED Y		2 SG. FORWARD 2 UN PORTED GUNS AFT			

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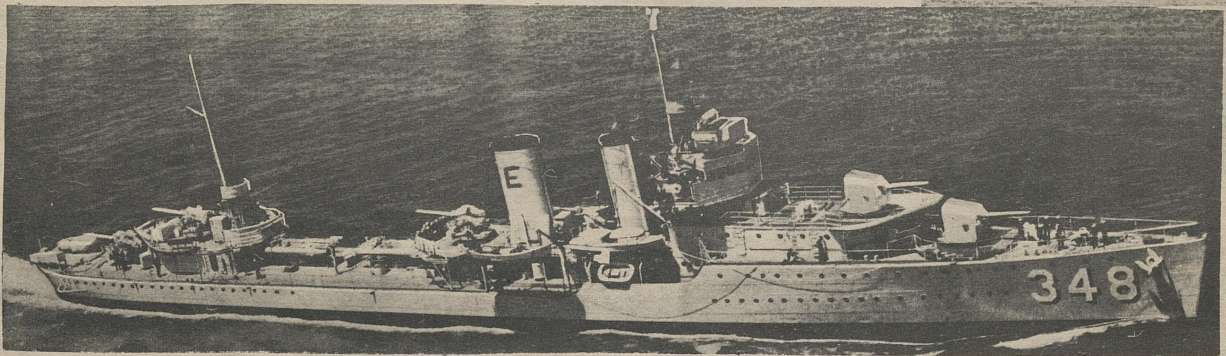
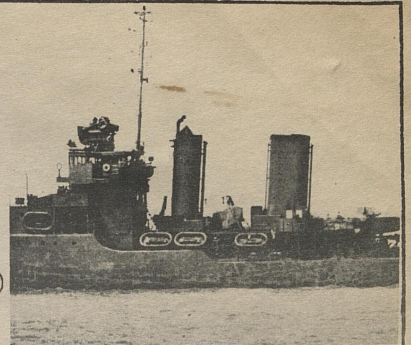
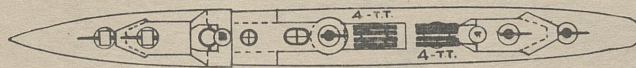
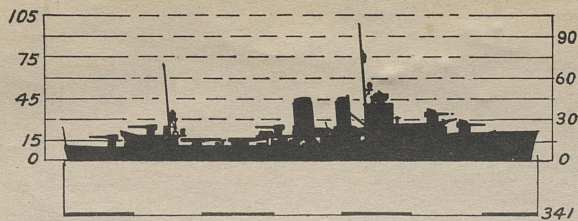
NATIONALITY U.S.		TYPE D.D.	CLASS MAHAN	SERIAL NUMBER 364	
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
DD 364-379, 384-385		STICK MAST	2 RACKING #1 CLOSE TO MAST SCREEN-RATING CAP ON NO 1	2 S/W FORWARD	4 SLASH PLT BET. 1 & 2 T. 4 T. BET 5 T'S

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NATIONALITY U.S.		TYPE D.D.		CLASS PORTER		SERIAL NUMBER 356
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES	
DD 356-363		STICK MAST A-BAPT @ 110M/37.	2 STACKING RACKING CAP W/O #1	4 TWINS		

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NATIONALITY U.S.		TYPE D.D.		CLASS FARRAGUT	SERIAL NUMBER 348
OTHER SHIPS IN CLASS	SERIAL NO.	MASTS	STACKS	TURRETS	OTHER FEATURES
DD 348-355		STICK FORE STICK MAIN	2 TRACKING #1 RD. #2 RD LARGER THAN 1	2 SG. FORE SLASH BET T.	

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