

RESTRICTED
~~CONFIDENTIAL~~

Serial No. 69

GENERAL INFORMATION BOOK

DD356 - U.S.S. PORTER
DD357 - U.S.S. SELFRIDGE
DD358 - U.S.S. Mc DOUGAL
DD359 - U.S.S. WINSLOW

- - - - -

Information Relative to Items Under the
Cognizance of Bureau of Construction & Repair,
NAVY DEPARTMENT, WASHINGTON, D.C.

----- oOo -----

OFFICE OF
SUPERINTENDING CONSTRUCTOR
FOR
UNITED STATES NAVY
NEW YORK SHIPBUILDING CORPORATION
CAMDEN, NEW JERSEY

1937

BUREAU OF SHIPS
NATIONAL ARCHIVES FILES
50741

SECTION A-1GENERALBASES OF HULL MEASUREMENTS

THE DESIGNER'S WATERLINE (D.W.L.) IS THE NORMAL WATERLINE, NAMELY, THAT WHICH CORRESPONDS TO DESIGNED NORMAL LOAD AND DRAFT. THIS WATERLINE IS PARALLEL TO THE DESIGNED MOLDED BASE LINE, AND IS AT DRAFT $11'-4\frac{1}{2}"$.

The forward perpendicular (F.P.) is located at the extreme forward end of the designer's waterline.

The after perpendicular (A.P.) is located at the extreme after end of the designer's waterline.

The middle perpendicular (M.P.) is located midway between the forward and after perpendiculars.

The molded Base line (B.L.) is located $1\frac{1}{2}"$ above the bottom of the midship portion of the flat keel plate.

Drafts are measured from the bottom of the midship portion of the keel extended forward and aft as indicated on the following plans:

U.S.S. "PORTER"	Bureau C&R No. 238101
U.S.S. "SEFRIDGE"	Bureau C&R No. 223345
U.S.S. "McDOUGAL"	Bureau C&R No. 190593
U.S.S. "WINSLOW"	Bureau C&R No. 237263

PROJECTIONS BELOW THE BOTTOM OF KEEL

THE UNDERWATER SOUND APPARATUS WHEN IN THE LOWERED POSITION EXTENDS 2'3" BELOW THE BOTTOM OF THE FLAT KEEL PLATE.

THE PORT AND STARBOARD PROPELLER TIPS EXTEND 3'-8" BELOW THE BOTTOM OF THE EXTENDED LINE OF THE FLAT KEEL PLATE.

PRINCIPAL DIMENSIONS OF HULL

Length Overall	381'-0 $\frac{1}{2}$ "
Length between perpendiculars (= length on D.W.L.)	372'-0"
Extension of vessel forward of F.P.	5'-0"
Extension of vessel aft of A.P.	4'-0 $\frac{1}{2}$ "
Midship section (at M.P.)	On Frame #93
Breadth, molded, maximum at D.W.L.	36'-6"
Breadth, outside of plating maximum at D.W.L.	36'-6 $\frac{1}{2}$ "
Depth, molded at Main Deck at Side	21'-0"
Freeboard at bow	23'-8"
Freeboard at Stern	12'-6 $\frac{1}{2}$ "
Displacement, standard (designed), tons	1,850
Displacement, to D.W.L., tons	2,131

Displacement, trial (actual) tons at
middle of 4 hour high speed run,
Trial Board Report -

U.S.S. PORTER - 2184
U.S.S. SELFRIDGE- 2140
U.S.S. McDOUGAL - 2149
U.S.S. WINSLOW - 2147

FRAME SPACING

Frames are numbered from 0 which is the Forward Perpendicular to 186 which is the After Perpendicular.

Complete transverse frames do not exist at all of the intermediate numbered locations as the principal framing of this vessel is longitudinal. Frame Spacing is 2 foot 0 inches throughout.

APPROXIMATE CAPACITIES

Oil Fuel - normal load	235 tons
Oil Fuel - full load (95%)	635.33 Tons
Potable Water	35.46 Tons
Reserve Feed Water	84.40 Tons
Diesel Oil Tanks (95%)	24.25 Tons

MISCELLANEOUS DATA

Inclination of propeller shafts

Vertical - down and aft Rake = .5922" per ft.

Horizontal - Parallel to ϕ of Ship

Area of Rudder (projected) 101 sq. ft.

General A-1

Center of foremast from F.P. at Main Deck	134' 4½"
Center of light pole from A.P. at Main Deck	139' 6"
Axis of Twin Mount #1 from F.P.	62' 0"
Axis of Twin Mount #2 from F.P.	86' 0"
Axis of Twin Mount #3 from A.P.	84' 0"
Axis of Twin Mount #4 from A.P.	60' 0"
Distance between axes of Twin Mount #1 & 2	24' 0"
Distance between axes of Twin Mount #2 & 3	202' 0"
Distance between axes of Twin Mount #3 & 4	24' 0"
<u>Heights above design draft 11' 4½" Waterline</u>	

MAIN BATTERY

Axis of 5" guns #1 & 2 in Twin Mount #1	25' 11-3/8"
Axis of 5" guns #3 & 4 in Twin Mount #2	33' 0"
Axis of 5" guns #5 & 6 in Twin Mount #3	25' 3"
Axis of 5" guns #7 & 8 in Twin Mount #4	17' 8-3/4"

SECONDARY BATTERY

Axis of 1.1" A.A.Machine guns #1,2,3 & 4	38' 6"
(A) Axis of 1.1" A.A.Machine guns #5,6,7 & 8	31' 6"
(B)*Axis of .50 cal. A.A.Machine guns #1 & 2	29' 2"
Axis of .50 cal. A.A.Machine guns #3 & 4	26' 4"
Axis of .50 cal. A.A.Machine guns #5 & 6	20' 6"
Axis of 20 mm. A.A.guns #1 & 2 (above Main Deck) (DD357)	Max.62.20" Min.46.46"

(A) 23' 9" DD356, DD357

(B) 11' 6" DD356

*All .50 cal. A.A.Machine guns removed from SELFRIDGE (DD357)

Heights above design draft 11' 4-1/2" Waterline

<u>TORPEDO TUBES</u>	<u>DD356</u>	<u>DD357</u>	<u>DD358</u> <u>DD359</u>
Quadruple mount Number 1	20' 3"	20' 3"	20' 3"
Quadruple mount Number 2	20' 3"	20' 3"	20' 3"

BATTERY CONTROL & OBSERVATION FEATURES

Range finder, P. & S.	Removed	Removed	47' 6-1/2"
5" Gun Director (Ford.) C.L.	52' 10"	52' 10"	52' 10"
5" Gun Director (Aft.) C.L.	Removed	Removed	44' 1"
Torpedo Director P. & S.	41' 6 1/2"	41' 6 1/2"	41' 6-1/2"
C.L. 36" Searchlight on After Top	Removed	Removed	55' 6-1/2"
C.L. 36" Searchlight on Mach.Gun.Plat.	31' 0"	31' 0"	

NAVIGATION AND SIGNALING FEATURES

Top of flag mast, extended foremast			102' 6"
Highest point of foremast (top of truck light)	84' 1 1/2"	84' 10 1/2"	94' 11-1/2"
C.L. of truck light on foremast	83' 7 1/2"	84' 1"	94' 5"
C.L. of signal yard on foremast	76' 7 1/2"	76' 4"	87' 3"
C.L. of towing lights on foremast	Removed	Removed	63' 6" & 69' 6"
C.L. of mast head light foremast	Removed	Removed	57' 6"
C.L. of towing light on light pole	48' 6"	49' 2"	
C.L. of mast head light on light pole	54' 6"	55' 2"	
C.L. of range light on foremast	74' 1"	73' 7"	
C.L. of Speed Light	37' 5"	37' 5"	38' 7"
C.L. of 12' Signal Searchlight	47' 11"	47' 11"	47' 11"

Heights above design draft 11'4-1/2" Waterline

MISCELLANEOUS

Top of forward smoke pipe	46'-5"
Top of after smoke pipe	44'-5"

DECKS, PLATFORMS AND BRIDGES

(Molded Dimensions at $\varnothing$)

Second Platform (below designed draft)	3'-3"
First Platform at F.P.	6'11-15/16"
First Platform Fr. 59	2'9-17/32"
First Platform Fr. 130	2'10-1/2"
First Platform at A.P.	4'5-1/2"
Main Deck at F.P.	15'5-3/4"
Main Deck at M.P.	10'9"
Main Deck at A.P.	12'5-1/2"
Forecastle Deck at F.P.	23'3-1/8"
Forecastle Deck at Fr. 72	18'3"
Superstructure Deck	26'9"
Top of After Deck House	19'0"
Ford. 1.1 Machine Gun Platform	34'0"
After 1.1 Machine Gun Platform	27'0"
Navigating Bridge	35'9"
Pilot House Top	43'6"

Heights above design draft 11'4-1/2" Waterline

Torpedo Loading Platform	16'-2"
After Top (Searchlight Platform)	51'-0"
.50 Cal. Mach. Gun Platform	24'-5"
Fore Top	58'-6"
Secondary Conning Station	26'-3"
Searchlight Operating Platform	33'-0"
Top of Clipping Room	34'-9"

Calculated Data at Design Draft 11'4-1/2" Waterline

Tons per inch immersion		24.17 Tons
Area of Water Plane		10,160 sq.ft.
C.G. of Water Plane aft of Fr. 93		22.62 ft.
Moment to change trim one inch (Approx.)		514 ft. tons
C.B. above bottom of keel		7.17 ft.
C.B. aft of Fr. #93		5.6 ft.
Transverse Metacenter above C.B.	*	11.30 ft.
Transverse Metacentric height (not corrected for Free Surface)	*	2.34 ft.
Longitudinal Metacenter about C.B.	*	1070 ft.
Longitudinal Metacentric height	*	1061 ft.
Area of midship section		327.5 sq. ft.
Wetted Surface		15,870 sq. ft.
Ratio, length between perpendiculars to beam (molded)		10.19 to 1
Prismatic coefficient		.612
Water Plane coefficient		.752

* From Condition III of Inclining Experiment (USS PORTER) with displacement 2149 tons and corresponding mean draft of 11'-5 1/4".

NOTE: The above data apply exactly only at a specified draft 11'- 4 1/2". For data on stability at other drafts see Inclining Experiment Book.

Coefficient of fineness are figured on a basis of W.L. beam over shell at midship section of 36'- 3 3/4".

STABILITY AND BALLASTING

Vessel when light, namely condition II of the inclining experiment, has a reduced displacement and righting arm. The nearest approach to this condition in service, with the vessel intact, is obtained when fuel, reserve feed water, ammunition and stores are practically expended. This condition is aggravated if topside load is increased for any reason. As a general guide, under such conditions, the policy should be to use fuel and water from the lowest tanks last. For further information as regards ballasting, attention is invited to the inclining experiment data.

Attention is also invited to instruction plate "Minimum safe operating displacement" located in chart house and which reads as follows:

Minimum safe operating displacement for this vessel is 2100 tons and corresponds to a mean draft of 11'2-1/2".

Water ballast shall be taken aboard in ballast oil tanks as necessary to maintain the displacement above 2100 tons.

PROPELLING MACHINERY

BOILERS

NUMBER	4
MANUFACTURER	BABCOCK & WILCOX CO.
TYPE	EXPRESS
DESIGNED WORK. PRESS.	400 LBS. PER SQ. IN.

TURBINES

NUMBER	2
MANUFACTURER	NEW YORK SHIPBUILDING CORP.
TYPE	IMPULSE & REACTION
NO. OF STAGES	H.P. 11 L.P. 17
R.P.M. (H.P. 3300 L.P. 2300)	SHAFT 400

DIESEL GENERATORS

NUMBER	2
MANUFACTURER	(GENERATORS - GEN.ELEC.CO.) (DIESEL ENGINES - COOPER BESSEMER CO.)
TYPE OF ENGINE	167.5 H.P. HIGH COMPRESSION 4 CYCLE-VERTICAL
NO. OF CYL.	8 CYL.
R.P.M.	1200 R.P.M.
TYPE OF GENERATOR	AC WITH $7\frac{1}{2}$ KW. EXCITER
VOLTS	450 AC
K.W.	70

TURBO -GENERATOR

NUMBER	2
MANUFACTURER	GENERAL ELECTRIC CO.
TYPE OF TURBINE	#DN-5 STAGE HORIZ. IMPULSE
NO. OF STAGES	5
R.P.M.	TURBINE 10071 GENERATOR 1200
TYPE OF GENERATOR	TYPE ATB-FR. 7565 REVOLVING FIELD 6 Pole-SEPARATELY EXCITED FROM OVERHUNG EXCITER
VOLTS	450 - 3 PHASE
K.W. A.C.	200
EXCITER - D.C.	5 K.W. 120 V. 4 POLE

PROPELLERS

NUMBER	2
TYPE	TRUE SCREW, SOLID MANGANESE BRONZE
MANUFACTURER	NEW YORK SHIPBLDG. CORP.
NO. OF BLADES	3
DIAMETER	11'-0"
PITCH	VARIABLE
SHAFT DIAMETER	15"

Complete information and instructions concerning the propelling machinery may be obtained from the "Booklet of Instructions for the Operation of Machinery", which was furnished the vessel by the Contractor in accordance with the requirements of the "General Specifications for Machinery".

SECTION A-5

ORDNANCE AND ORDNANCE OUTFIT

MAIN BATTERY

GUN NO.	BORE	CALIBER	LOCATION	ELEVATION	DEPRESSION	TRAIN
1 & 2	5"	38	Twin Mount #1	35°	10°	*30° to 330°
3 & 4	5"	38	Twin Mount #2	35°	10°	*30° to 330°
5 & 6	5"	38	Twin Mount #3	35°	10°	30° to 330°
7 & 8	5"	38	Twin Mount #4	35°	10°	30° to 330°

* 210° to 150° DD356

Two 5" loading machines are located on the main deck between frames 107 and 113 Port and Starboard.

SECONDARY BATTERY (A.A. GUNS)
for USS McDOUGAL DD358 and USS WINSLOW DD359

Gun No.	Bore	Cal- iber	Location			Eleva- tion	Depres- sion	Train
			Deck	Frame	Side			
1,2,3 4	1.1"	75	Mach. Gun Plat.	53	C.L.	110°	15°	360°
5,6,7, 8	1.1"	75	Mach. Gun Plat.	134	C.L.	110°	15°	360°
1		.50	Mach.	95	S	80°		360°
2		.50	Gun Plat.	95	P	80°		360°
3 & 4		.50	Mach. Gun Plat.	95	P&S	80°		360°
5 & 6		.50	Mach. Gun Plat.	135	P&S	80°		360°

SECONDARY BATTERY (A. A. GUNS) (Cont'd.)for USS PORTER DD356

GUN NO.	BORE	CAL- IBER	L O C A T I O N			ELEVA- TION	DEPRES- SION	TRAIN
			DECK	FRAME	SIDE			
1, 2, 3, 4.	1.1"	75	Mach. Gun Plat.	53	C.L.	110°	15°	360°
5, 6, 7, 8.	1.1"	75	Top After Deck House	125	Stbd.	110°	15°	360°
1 & 2		.50	Main	104	P & S	80°		360°
3 & 4		.50	Mach Gun Plat.	95	P & S	80°		360°
5 & 6		.50	Top After Deck House	135	P & S	80°		360°
<u>for USS SELFRIDGE DD357</u>								
1, 2, 3, 4.	1.1"	75	Mach. Gun Plat.	53	C.L.	110°	15°	360°
5, 6, 7, 8.	1.1"	75	Mach. Gun Plat.	134	C.L.	110°	15°	360°
1 & 2	20MM	20MM	Main	106	P & S	85°	5°	360°
3 & 4	20MM	20MM	Mach. Gun Plat.	95	P & S	85°	5°	360°

TORPEDO TUBES

TORPEDO TUBE NO.	DIA. of TORP.	LENGTH TORP. (WITHOUT HEAD)	L O C A T I O N			T R A I N	
			DECK	FRAME	SIDE	FWD.	AFT.
1	21"	22' 6"	Torpedo Loading Plat.	86	Ø	45°	42°
2	21"	22' 6"	Torpedo Loading Plat.	108	Ø	45°	42°

NOTE: The thickness of roller paths in the twin gun mounts exceed the normal thickness of .745" by .006". Special rollers to compensate for this excess thickness have been supplied by the U.S. Naval Gun Factory.