

CONFIDENTIAL
NAVSHIPS IB-DD727-1

GENERAL INFORMATION

BOOK

DESTROYER

USS DE HAVEN (DD727)

Information relative to construction and equipment and a description of electrical and other auxiliaries under the cognizance of the Bureau of Ships, Navy Department, Washington, D. C.

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SECTION A-1

GENERAL

BASES OF HULL MEASUREMENTS

THE DESIGNER'S WATERLINE (D.W.L.) IS THE WATERLINE WHICH CORRESPONDS, APPROXIMATELY, TO THE DESIGNED NORMAL LOAD AND DRAFT. THE LENGTH BETWEEN PERPENDICULARS IS OBTAINED FROM THE DESIGNER'S WATERLINE. This waterline, 13 feet - 0 inches above the molded baseline, is parallel to the molded baseline, and is at draft 13 feet - 1-1/8 inches above bottom of keel, which is the baseline for draft marks.

THE MOLDED BASELINE (M.B.L.) is located 1-1/8 inches above the bottom of the midship portion of the keel.

DRAFTS are measured from baseline for draft marks as per plan Number 692-28040-1 - Bureau of Ships Basic Hull Number 565894.

THE FORWARD PERPENDICULAR (F.P.) is located at the intersection of the designer's waterline and the outline of the stern at Frame 0.

THE AFTER PERPENDICULAR (A.P.) is located at the intersection of the designer's waterline and the outline of the stern, 18 inches aft of Frame 210.

THE MIDSHIP PERPENDICULAR (M.P.) is located 9 inches aft of Frame 105.

PROJECTIONS: BELOW BOTTOM OF KEEL

Description	Projection Below Bottom of Keel	Location		
		Frame	Off C.L.	Side
Propellers	4' - 6"	200	8' - 6-1/8"	P
	4' - 6"	200	8' - 6-5/8"	S
Sonar dome	4' - 5 - 1/2"	7 1/2" aft 23- 2 1/2" aft 28	0	On C.L.
*Hydrophone	2' - 6"	11" aft 14	0' - 11' 1/4"	P

* Maximum Extension

PRINCIPAL DIMENSIONS OF HULL

Length overall (measured)	375' - 11-13/16"
Length between perpendiculars = (length on D.W.L.) (measured)	368' - 5-11/16"
Extension of vessel forward of F.P.	5' - 0"
Extension of vessel aft of A.P.	2' - 6-1/8"
Breadth, molded, maximum	40' - 10-5/8"
Breadth, outside of plating maximum	41' - 1-5/8"
Depth, molded, at M.P. (9 inches aft of Frame 105)	23' - 0"
Freeboard at bow to D.W.L.	20' - 1-1/8"
Freeboard at stern at D.W.L.	9' - 5-7/8"
Displacement, to D.W.L.	2670 Tons

FRAME SPACING

Frames are numbered from 0 at the forward perpendiculars to 210, which is 18 inches forward of after perpendicular.

Complete transverse frames do not exist at all of the intermediate numbered locations

as the principal framing of this vessel is longitudinal.

Part frames in the forward overhang are designated as "A" and "B".

Frame spacing is 21 inches F.P. to Frame 210.

The above are design dimensions.

APPROXIMATE CAPACITIES

Fuel oil - full load (95 percent capacity).....	141,245 Gals.	497.30 Tons
JP-5 - full load (95 percent capacity).....	7,025 Gals.	21.29 Tons
Potable water (full capacity).....	17,454 Gals.	64.81 Tons
Reserve feed water (full capacity).....	19,142 Gals.	71.08 Tons
Ballast (100 percent capacity).....	78,445 Gals.	299.63 Tons
Peak ballast (100 percent capacity).....	5,312 Gals.	20.29 Tons
Bilges (2' - 0" sounding).....	27,008 Gals.	100.29 Tons

CALCULATED DATA AT DESIGNER'S WATERLINE

(Which is 13 feet - 1-1/8 inches above Bottom of Keel)

Tons per inch immersion	26.7 Tons
Area of water plane	11240 Sq. Ft.
C.G. of water plane 9 feet aft of Frame 105	22.48 Feet
Moment of change trim one inch	573 Ft. Tons
C.B. above bottom of keel	7.90 Feet
C.B. aft of midships	7.8 Feet
Transverse metacenter above C.B.	11.49 Feet
Longitudinal metacenter above C.B.	978 Feet
Wetted surface	17950 Sq. Ft.
Ratio, length between perpendiculars to beam, maximum	8.98

NOTE: For data on stability, see Booklet of Inclining Experiment Data and the Damage Control Book.

MISCELLANEOUS DATA

Inclination of propeller shafts	
Vertical - down and aft (S)	0.53968" Per Foot
(P)	0.85714" Per Foot
Horizontal - spread	0.03297" Per Foot
Area of one rudder (projected)	58.75 Sq. Ft.
Length of signal yard	30' - 0"

HEIGHTS ABOVE DESIGNER'S WATERLINE

(Which is 13 feet - 0 inches above M.B.L.)

Deck heights are measured to the top of the deck plating.
 Gun heights are measured to the center of the trunnion.
 Optical instruments are measured to the center of the line of sight.
 Torpedo tubes and projectors are measured to the bolted base.

MAIN BATTERY

5-Inch twin gun mount No. 51	23' - 10-1/8"
5-Inch twin gun mount No. 52	29' - 5"
5-Inch twin gun mount No. 53	16' - 11-3/4"

UNDERWATER BATTERY

Mk. 11 projector (P)	21' - 8-9/64"
Mk. 11 projector (S)	21' - 8-9/64"

HEIGHTS ABOVE DESIGNER'S WATERLINE
(Which is 13 feet - 0 inches above M.B.L.)--Continued

TORPEDO TUBES

Mark 25 tubes (P/S)	18' - 9-1/2"
Mark 32 tubes (P/S), approx.....	18' - 6"

BATTERY CONTROL AND OBSERVATION FEATURES

Centerline of 5-inch gun director	42' - 4"
Centerline of range finder	42' - 5"
Centerline of radio direction finder	38' - 8"

NAVIGATION AND SIGNALING FEATURES

For navigation light heights, see Booklet of General Plans BuShips Plan No. DD727-S0103-322866.

Centerline pelorus on Nav. bridge (P)	35' - 11-1/2"
Centerline pelorus on Nav. bridge (S)	35' - 11-1/2"
Centerline signal searchlight on O3 level, Frame 73 (P)	42' - 11-1/2"
Centerline signal searchlight on O3 level, Frame 73 (S)	42' - 11-1/2"
Centerline signal searchlight on O3 level, Frame 84 (P)	42' - 10-3/4"
Centerline signal searchlight on O3 level, Frame 84 (S)	42' - 10-3/4"

MISCELLANEOUS

Top of fwd. smokestack	52' - 9"
Top of aft. smokestack	47' - 0"

HEIGHT OF ALL BRIDGES AND PLATFORMS ABOVE WEATHER DECK (DESIGN DIMENSIONS)
(Upper side of plating of centerline of ship)

Main deck F.P.....	19' - 1"
Main deck Frame 41-1/2	15' - 4-7/8"
Main deck 6 inches aft. Frame 172	9' - 4-5/8"
Main deck A.P.....	9' - 6-1/8"
Superstructure deck Frame 41-1/2	22' - 6-7/8"
Superstructure deck Frame 60	20' - 11-7/8"
Superstructure deck 6 inches aft. Frame 172	19' - 6"
Navigating bridge Frame 60	29' - 1-5/8"
Top pilothouse Frame 63	37' - 5-5/8"
Top of helicopter hangar	31' - 9"
Top of torpedo stowage comp't.....	28' - 3"

BENCH MARKS

Bench marks for the periodic checking and alignment of navigational and ordnance equipment have been removed from this ship.

PROPELLING MACHINERY

BOILERS

Boiler	Serial Number	Manufacturer	Type	Designed Working Pressure P.S.I.
No. 1	C-4163	Babcock & Wilcox	Oil fired express with super-heater and economizer	634
No. 2	C-4164	Babcock & Wilcox	Oil fired express with super-heater and economizer	634
No. 3	C-4165	Babcock & Wilcox	Oil fired express with super-heater and economizer	634
No. 4	C-4166	Babcock & Wilcox	Oil fired express with super-heater and economizer	634

TURBINES

Turbine	Stbd. Serial Number	Port Serial Number	Manufacturer	Number of Stages	Type of Stages	Designed R.P.M.
H.P.	57404	57405	General Electric Co.	1 11	Cross compound Curtis Rateau	5696
Cruising	57402	57403	General Electric Co.	1 7	Curtis Rateau	10119
L.P.	57400	57401	General Electric Co.	6	Double flow Rateau	4788
Astern	Same casing and serial number as L.P.			1	Curtis at each end of L.P. turbine	2695

PROPELLERS

No.	Type	Manufacturer	No. Blades	Dia.	Pitch	Shaft Dia.	Des. R.P.M.	Des. Shaft H.P.
2	Solid	Mare Island Naval Shipyard	4	12' - 0"	12' - 9.960"	16-1/2"	350	60,000 2-Shafts

Complete information and instructions concerning the propelling machinery may be obtained from the Instruction Books for Main Propulsion Machinery, which were furnished the vessel by the contractor in accordance with the requirements of the General Specifications for Machinery.

BATTLE CONDITION

Information as to the procedure required to place the ship in Battle Condition is included in the Damage Control Book.

SECTION A-5

ORDNANCE AND ORDNANCE OUTFIT

MAIN BATTERY

Gun No.	Bore Inches	Caliber	Location			Elevation Degrees	Depression Degrees	Train Degrees
			Deck	Frame	Side			
Twin mount No. 51	5	38	Main deck	6" Fwd. 32	C.L.	85	15	300
Twin mount No. 52	5	38	Super deck	5" Fwd. 50	C.L.	85	15	300
Twin mount No. 53	5	38	Main deck	180	C.L.	85	15	260

PROJECTORS (MARK 11, MOD 0)

Two Mark 11 projectors are provided these vessels. Both projectors are located at Frame 60 on superstructure deck, one port and one starboard. A complete discussion of the projector, its construction, operation, safety precautions, and instructions for use is contained in Bureau of Ordnance Publication Ordnance Pamphlet 1001.

A 5-inch loading machine, Mark XV, located on superstructure deck, Frame 97 centerline.

MARK 25 TORPEDO TUBES

Two Mark 25 torpedo tubes are provided this ship. Both tubes are lo-

cated at Frame 97 on the superstructure deck, one port and one starboard. They are installed in a fixed position, 45° off the centerline of the ship. For a complete description of the Mark 25 torpedo tube, its installation, operation and maintenance, see Bureau of Ordnance publication Navord 8865.

MARK 32 TORPEDO TUBES

Two Mark 32 torpedo tubes are provided the ship. Both tubes, consisting of three barrels each, are located at Frame 103-1/2 on the superstructure deck, one port and one starboard. For a complete description of the Mark 32 torpedo tube, its operation and maintenance, see Navord OP2411.