

CONFIDENTIAL
NAVSHIPS IB-DD717-1

**GENERAL INFORMATION
BOOK
DESTROYER
USS THEODORE E. CHANDLER
(DD717)**

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.

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 bottom of keel amidships extended as per plan Bureau of Ships Number DD692-S2804-509870.

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

THE AFTER PERPENDICULAR (A.P.) is located at the intersection of the designer's waterline and the outline of the stern, 12 inches aft of Frame 210.

THE MIDSHIP PERPENDICULAR (M.P.) is located 12 inches fwd. of Frame 110 fwd.

PROJECTIONS: BELOW BOTTOM OF KEEL

<u>Description</u>	<u>Projection Below Bottom of Keel</u>	<u>Frame</u>	<u>Location Off C.L.</u>	<u>Side</u>
Propellers	4' - 8-3/8" (S) 4' - 8" (P)	200	8'-6"	P & S
Sound	3' - 11-1/2"	57-62	0	On C.L.
Rodmeter	0' - 7-1/4" * Approx.	8" Fwd. Fr. 72	2'-6"	S
Hydrophone	5' - 0" Approx.	44	0 - 10"	S

* In Operating Position.

PRINCIPAL DIMENSIONS OF HULL

Length overall (measured)	390' - 2-3/4"
Length between perpendiculars	
= (length on D.W.L.) (measured)	383' - 0"
Extension of vessel forward of F.P. (measured)	5' - 1"
Extension of vessel aft of A.P. (measured)	2' - 1-3/4"
Breadth, molded, maximum	40' - 11"
Breadth, outside of plating maximum, at frame 117, (measured)	41' - 1-3/8"
Depth, centerline, molded, to main deck amidships 9-inches Fwd. Frame 110 Fwd.	23' - 10"
Freeboard at bow to D.W.L.	19' - 2-5/8"
Freeboard at stern at D.W.L.	9' - 4-3/8"
Displacement, to D.W.L. (in Tons S.W.)	3040 Tons
Displacement, to D.W.L. (in Fresh Water)	2952 Tons

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FRAME SPACING

Frames are numbered from 0 at the forward perpendicular to 110 fwd., and from 110 aft to 210, which is 18 inches fwd. of the after perpendicular. The frames between 110 fwd. and 110 aft are lettered from "A" to "G".

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.

APPROXIMATE TANK CAPACITIES

Liquid	Capacity-Percent	Gallons	Barrels	Tons
Fuel oil	95	204,663	4872.9	720.61
Diesel oil	95	10,479	249.5	32.55
Fresh water	100	18,142	431.9	67.38
Reserve feed water	100	19,142	455.8	71.07
Peak ballast	100	5,312	126.5	20.29
Ballast (or F.O.)	100	99,336	2365.1	379.44

CALCULATED DATA AT DESIGNER'S WATERLINE
(Which is 13 feet 1-1/8 inches above bottom of keel)

Tons per inch immersion	28.08	Tons
Area of water plane	11,800	Sq.Ft.
C.G. of water plane 9 inches aft of Frame 109	22.50	Feet
Moment to change trim one inch	630	Ft.Tons
C.B. above bottom of keel amidship	7.87	Feet
C.B. aft of midships	7.50	Feet
Transverse metacenter above bottom of keel amidships	19.50	Feet
Longitudinal metacentric Radius	948	Feet
Wetted Surface	18,720	Sq.Ft
Addition to displacement due to 1 Ft. change of trim by stern	19.80	Tons
Ratio, length between perpendiculars to beam, maximum	9.125	

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 (starboard)	0.53968" Per Foot
(port)	0.85714" Per Foot
Horizontal--spread	0.03297" Per Foot
Area of one rudder (projected).	58.75 Sq.Ft.
Length of signal yard	21' - 0"

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

MAIN BATTERY

5"/38 Cal. gun mount No. 51--Frame 32 (CL)	23' - 7-1/8"
5"/38 Cal. gun mount No. 52--Frame 50 (CL)	29' - 3-3/8"
5"/38 Cal. gun mount No. 53--Frame 180 (CL).	16' - 8-1/2"

The above are design dimensions.

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

SECONDARY BATTERY

3"/50 Cal. gun mount No. 31—Frame 87 (S).	33' - 10-7/16"
3"/50 Cal. gun mount No. 32—Frame 87 (P)	33' - 10-7/16"
3"/50 Cal. gun mount No. 33—Frame 145 (P)	23' - 10-3/4"
3"/50 Cal. gun mount No. 34—Frame 162 (CL).	23' - 11-1/8"

UNDERWATER BATTERY

21" AW Quintuple torpedo mount—Frame 104 (CL)	19' - 10-7/8"
7.2" Projector—Frame 60 (P&S)	18' - 9-5/8"
D.C. Track—Frame 205 (S)	10' - 1-11/16"
Torpedo launching racks—Frame 97 (P&S)	11' - 6"

BATTERY CONTROL AND OBSERVATION FEATURES

Rangefinder—Frame 72 (CL)	41' - 8"
Director No. 51—Frame 72 (CL)	41' - 11"
Director No. 31—Frame 78 (S)	36' - 9-11/16"
Director No. 32—Frame 78 (P)	36' - 9-11/16"
Director No. 33—Frame 153 (CL)	31' 0-3/8"
Torpedo director—Frame 111 (CL)	31' 7-1/8"

NAVIGATION AND SIGNALING FEATURES

Navigation light heights are indicated in the "Booklet of General Plans."

Pelorus—Frame 66 (P&S)	37' - 6-5/16"
12" Signal searchlight—Frame 82 (S)	31' - 5-3/16"
12" Signal searchlight—Frame 80 (P)	31' - 5-3/16"
12" Signal searchlight—Frame 81 (P&S)	37' - 3-1/8"

MISCELLANEOUS

Top of fwd smoke stack	46' - 6"
Top of aft smoke stack	43' - 7"

BRIDGES AND PLATFORMS

(Upper Side of Plating at Centerline of Ship)

Main deck at F.P.	19' - 1-1/8"
Main deck at Frame 63	13' - 7-1/8"
Superstructure deck at Frame 63	20' - 9-1/8"
Navigation bridge at Frame 63	29' - 1-7/8"
Top of pilothouse at Frame 63	37' - 6"
Main deck at Frame 155	9' - 6-1/2"
Superstructure deck at Frame 155	16' - 8-3/4"
Top of R.S. room at Frame 155	23' - 10-3/4"
Torpedo director platform at Frame 111	31' - 7-1/8"

The above are design dimensions.

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BENCH MARKS

Bench marks for the periodic checking and alignment of navigational and ordnance

equipment are provided on suitably inscribed label plates fitted at the bases of the respective units, as follows:

Item	No. of Plates	Inscription	Deck	Location	
				Centerline	Plates
5" Twin gun mount No. 52	2	C.L. gun	Super.	5" Fwd. Fr. 50 on C.L.	C.L. P/S to suit
3"/50 Cal. gun mount No. 31	4	C.L. gun	Gun plat	Fr. 86 & 12'-0" to S	C.L. fore & aft P/S to suit
3"/50 Cal. gun mount	4	C.L. gun	Gun plat	Fr. 86 & 12'-0" to P	C.L. fore & aft P/S to suit
3"/50 Cal. twin gun mount No. 33	2	C.L. gun	Super.	9" Fwd Fr. 145 & 10'-0" to P	C.L. fore & aft
3"/50 Cal. twin gun mount No. 34	2	C.L. gun	Super.	12" Fwd. Fr. 163 on C.L.	C.L. fore & aft
Torpedo tube mount No. 1	4	C.L. tor- pedo tubes	Super.	6" Fwd Fr. 104 on C.L.	C.L. fore & aft P/S to suit
Director No. 31 Mk. 63	4	C.L. gun director	Navi- gating bridge	Fr. 78 & 9'-6" to S	C.L. fore & aft P/S to suit
Director No. 32 Mk. 63	4	C.L. gun director	Navi- gating bridge	Fr. 78 & 9'-6" to P	C.L. fore & aft P/S to suit
Starboard pelorus	4	C.L. pelorus	Navi- gating bridge	10'-0" S Fr. 66-1/2	C.L. fore & aft P/S to suit
Port pelorus	4	C.L. pelorus	Navi- gating bridge	10'-0" P Fr. 66-1/2	C.L. fore & aft P/S to suit

PROPELLING MACHINERY

BOILERS

Boiler	Serial No	Manufacturer	Type	Designed Working Pressure p.s.i
No 1 Steam drum Water drum S.H. header Inlet Outlet	2786-1 33203 33204	Babcock & Wilcox	3 Drum express type, single uptake, divided furnace, superheat control, oil fired, fitted with integral fired superheaters & economizers	634
No 2 Steam drum Water drum S.H. header Inlet Outlet	2786-2 33206 33207	Babcock & Wilcox		634
No 3 Steam drum Water drum S.H. header Inlet Outlet	2786-3 32905 33205	Babcock & Wilcox	3 Drum express type, single uptake, divided furnace, superheat control, oil fired, fitted with integral fired superheaters & economizers	634
No. 4 Steam drum Water drum S.H. header Inlet Outlet	2786-4 33208 33209	Babcock & Wilcox		634

TURBINES

Turbine	Stbd Serial Number	Port Serial Number	Manufacturer	Number of Stages	Type of Stages	Designed R.P.M.
H.P	67986	57159	General Electric	1 11	2 Row velocity single row	5686
Cruising	67984	57445	General Electric	1 7	2 Row velocity single row	10132
L.P	67988	67983	General Electric	6	Single row	4784
Astern			General Electric	1	2 Row velocity at ea. end of L.P turbine	2695

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PROPELLERS

No.	Type	Manufacturer	No. Blades	Dia.	Pitch	Des. R.P.M.	Des Shaft H.P
2	Solid	Cramp Brass & Iron Co.	3	12'-3"	12'-7"	350	60,000 2-Shafts

SHAFTING

Shaft	Length	Sections	Diameter		
			Line	Stern Tube	Propeller
S	179' - 11-1/4"	6	15-3/4"	16"	16-1/2"
P	99' - 6-1/8"	3	15-3/4"	16"	16-1/2"

Descriptive information concerning propelling machinery will be found in the Bureau of Ships Manual, as follows:

Chapters 41 and 50 (turbines), Chapter 42 (reduction gears), Chapter 43 (shafting), Chapter 44 (propellers), and Chapter 51 (boilers).

BATTLE CONDITION

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

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SECTION A-5
ORDNANCE AND ORDNANCE OUTFIT

MAIN BATTERY

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

One twin 5-inch loading machine, mark XV, model 1, is located on the superstructure deck, at Frame 110E, on C.L.

SECONDARY BATTERY

Gun Number	Bore	Caliber	Location			From C.L. of Ship	Elevation	Depression	Train
			Deck	Frame	Side				
Mount No. 31	3"	50	Gun plat.	87	S	12'-0"	85°	15°	285°
Mount No. 32	3"	50	Gun plat.	87	P	12'-0"	85°	15°	285°
Twin mount No. 33	3"	50	Super.	145	P	10'-0"	85°	15°	720°
Twin mount No. 34	3"	50	Super.	163	C.L.	--	85°	15°	720°

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UNDERWATER BATTERY

Equipment	Mark and Mod.	Handles	Location			Off C.L. of Ship	Train	
			Deck	Frame	Side		Fwd.	Aft
Torpedo tube quintuple	14-9	21" A.W. torpedoes	Super.	104	C.L.	---	40°	40°
Projector	10-1	7.2" Projectors	Super.	60	P & S	11'-0"	0	0
Torpedo launching racks	4-1	Mark 32 acoustical type torpedoes	Main	97	P & S	17'-6"	0	0
D.C. track	9-0	Depth charges	Main	205	S	11'-6"	0	0