

U.S.S. NITRO AE-2 BOOKLET of GENERAL PLANS

CORRECTED TO SUIT SHIP

Place	NAVY YARD PUGET SOUND	DEC 30, 1922
	NAVY YARD PUGET SOUND	JAN 1, 1924
	NAVY YARD PHILA., PA	NOV 3, 1932
	NAVY YARD, NORFOLK	6-28-35
	NAVY YARD, NORFOLK	12-15-36
	NAVY YARD, NORFOLK	2-28-40
	NAVY YARD, NORFOLK	9-23-41
	NAVY YARD, NORFOLK	4/17/43
	NAVY YARD, MARE ISLAND	27-JULY-45

GENERAL DIMENSIONS (ORIGINAL DESIGN DATA)

PRINCIPAL DIMENSIONS

LENGTH OVERALL	483' 10 1/2"
LENGTH BETWEEN PERP'S	460' 0"
BREADTH MOLDED AT FR.# 87	0' 10 3/8"
DEPTH MOLDED ABOVE CENTER LINE FR. #87	40' 3 7/16"
DEPTH MOLDED ABOVE AT SIDE FR. #87	39' 3 7/8"
TONS PER IN. (TRIAL LOAD, MEAN DRAFT 22' 1")	57 TONS
DISPLACEMENT, LIGHT CONDITION	6617.07
DISPLACEMENT, ACTUAL NORMAL CONDITION	12421.37
DISPLACEMENT, ACTUAL FULL LOAD CONDITION	13468.39
MEAN DRAFT, EXTREME LIGHT CONDITION	13' 11"
MEAN DRAFT, ACTUAL FULL LOAD CONDITION	25' 6 1/8"
TRIM BY STERN, EXTREME LIGHT CONDITION	10' 2"
TRIM BY STERN, FULL LOAD CONTITION	1' 8 5/8"

OTHER DIMENSIONS ETC.

AREA OF MIDSHIP SECTION	1295.00
AREA OF IMMERSSED MIDDLE LINE PLANE	9916.40
AREA OF 22' 1" WATER PLANE	21200.00
AREA OF WETTED SURFACE (22' 1" W.L)	36400.00
PRISMATIC COEFFICIENT DESIGNED	0.668
MIDSHIP COEFFICIENT DESIGNED	0.958
WATER LINE COEFFICIENT DESIGNED	0.751
CENTER OF BOUYANCY AFT OR MIDDLE	2.00 FT
TRANSVERSE METACENTER ABOVE C.B.	13.25 FT
LONGITUDINAL METACENTER ABOVE C.B.	620.00 FT
CENTER OF GRAVITY FULL LOAD	5.41 FT
FRAME SPACING - FR. #1 TO 30	2' 0"
FRAME SPACING - FR. #30 TO 163	3' 0"
FREEBOARD AT STEM TRIAL LOAD	29' 4 3/8"
FREEBOARD AT STERN TRIAL LOAD	18' 3 3/4"
TOTAL AREA OF RUDDER	183.13
AXIS OF RUDDER AFT OF A.P.	0' 8 1/2"

HEIGHTS ABOVE BOTTOM OF KEEL

BRIDGE AT CENTER LINE OF SHIP	66' 2 5/8"
BRIDGE AT SIDE	65' 5 15/16"
AXIS OF 5" GUN ON MAIN DK. AT FR. #22 1/2	50' 2 3/4"
AXIS OF 5" GUN ON MAIN DK. 8' 0 5/16" AFTER FR. #163	47' 9 3/4"
AXIS OF ANIT-AIR CRAFT GUN ON SUPER DK. FR. #153 1/2	56' 5 3/4"
TOP OF SMOKE STACK	80' 1 1/2"
SIGNAL YARD	165' 8"
TOP OF FOREMAST TRUCK LIGHT	152' 4 3/4"
TOP OF MAIN MAST TRUCK LIGHT	186' 4 1/4"
CENTER LINE OF FORWARD SEARCHLIGHT	88' 11 5/8"
CENTER LINE OF AFT SEARCHLIGHT	69' 6 3/16"

BOILERS

NO & KIND	4 BABCOK-WILSON
DESIGNED WORKING PRESSURE	215#
HEATING SURFACE, EACH BOILER	3500
DIAMETER OF MAIN STEAM PIPE	8
DIAMETER OF STEAM PIPE FROM EACH BOILER	6"
CUBICAL CONTENTS OF COMBUSTION CHAMBER EACH BOILER	1000 CU FT
NUMBER OF OIL BURNERS (EACH BOILER)	FOUR
NUMBER OF SMOKE STACKS	ONE
HIEGHT FROM FLOOR TO UPTAKE FLANGE	21' 9"
AREA OF SECTION THROUGH SMOKE PIPE	53.46
OIL FIRING ARRANGEMENTS - COEN-PATENT.	

TRUBINES

TYPE - PARSONS TURBINES IN CONNECTION WITH WESTINGHOUSE REDUCTION GEAR. FULL SPEED - STEAM IS ADMITTED TO THE TURBINE, EXPANDING INTO THE L.P. AHEAD, THEN DISCHARGED TO THE CONDENSER, ASTERN - STEAM IS ADMITTED TO THE L.P. ASTERN TURBINE THEN DISCHARGED TO THE CONDENSER.

REDUCTION GEAR

TYPE - WESTINGHOUSE

PROPELLER

DIAM. OF PROPELLER SHAFT	13 1/2"
DIAM. OF LINE SHAFT	13 1/2"
DIAM. OF THRUST SHAFT	12 5/8"
NO. & DIAM. OF PROPELLER	14' 0"
PITCH ADJUSTABLE	18' 5"
AREA PROJECTED	49.3

BATTERY

5" rapidfire	Main deck	FR. # 22 port side
5" rapidfire	Main deck	FR. # 22 starboard side
5" rapidfire	Main deck	AFTAP port side
5" rapidfire	Main deck	AFTAP starboard side
3" anti-aircraft	Super	FR. # 154 port side
3" anti-aircraft	Super	FR. # 154 starboard side

DECK MACHINERY

DECK WINCHES

SINGLE GEAR, STEAM REVERSIBLE 125 #, SPEED 200 FT. PER MIN. WKG LOAD 4000#
 MAKE: WASHINGTON IRON WORKS, SEATTLE, WA.
 ANCOR WINDLASS

HORIZONTAL SPUR GEAR, TWO CYL 12" DIAM
TWO 12000# ANCHORS SIMULTANEOUSLY AT 6 FATHOMS PER MIN.
MAKE: BATH IRON WORKS, BATH, ME.

TOWING ENGINE

STEAM 125 #, SUITABLE FOR HOLDING 300 FATHOMS 7" WIRE ROPE
APPROX. WT. 75000 #
MAKE: AMERICAN ENGINEERING COMPANY, PHIL' A PA.

WHIP HOISTS

ELECTRIC WENCH MOTOR, REVERSIBLE WATER TIGHT, 120 VOLT DIRECT
CURRENT 3 H.P. WK LOAD 500# 100 FT PER MIN
MAKE: GENERAL ELECTRIC COMPANY, SCHINECTADY, NY

BOATS

3 - 36' MOTOR SAIL 70 MEN (EACH)
1 - 35' ENG 27 MEN
2 - 30' WHALEBOAT 40 MEN (EACH)
1 - 12' PUNT

COMPLEMENT

COMMANDING OFFICER	1
WARDROOM OFFICERS	17
WARRANT OFFICERS	3
CHIEF PETTY OFFICERS	15
SEAMAN BRANCH	54
ARTIFICERS BRANCH	80
SPECIAL BRANCH	15
COMMISSARY BRANCH	6
MESSMEN BRANCH	13
<i>GRAND TOTAL</i>	<i>199</i>

OFFICERS	16
CHIEF PETTY OFFICERS	15
CREW	185