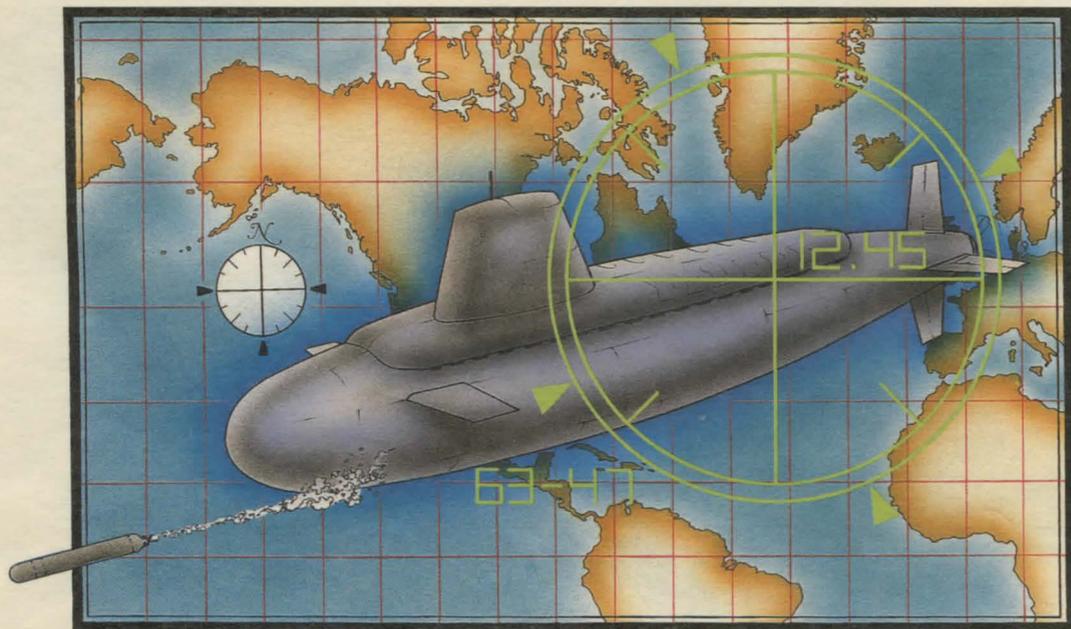


SUBMARINE NAVIGATION CHART

WESTERN HEMISPHERE



150

165

180

165

150

135

120

1

85

80

75

70

60

45

Canada Plain

ARCTIC OCEAN

Bering Straits

Aleutian Basin

Aleutian Trench

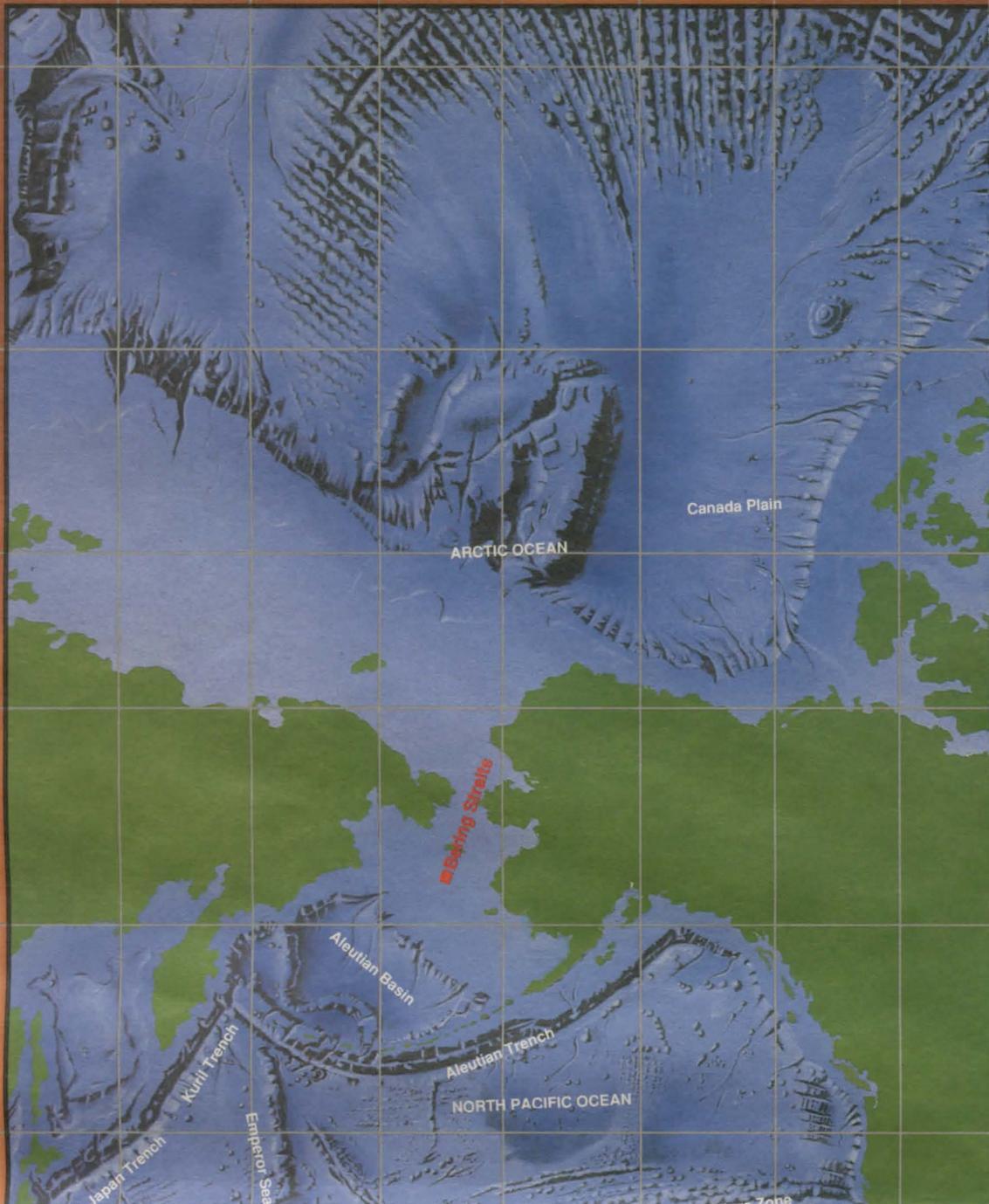
NORTH PACIFIC OCEAN

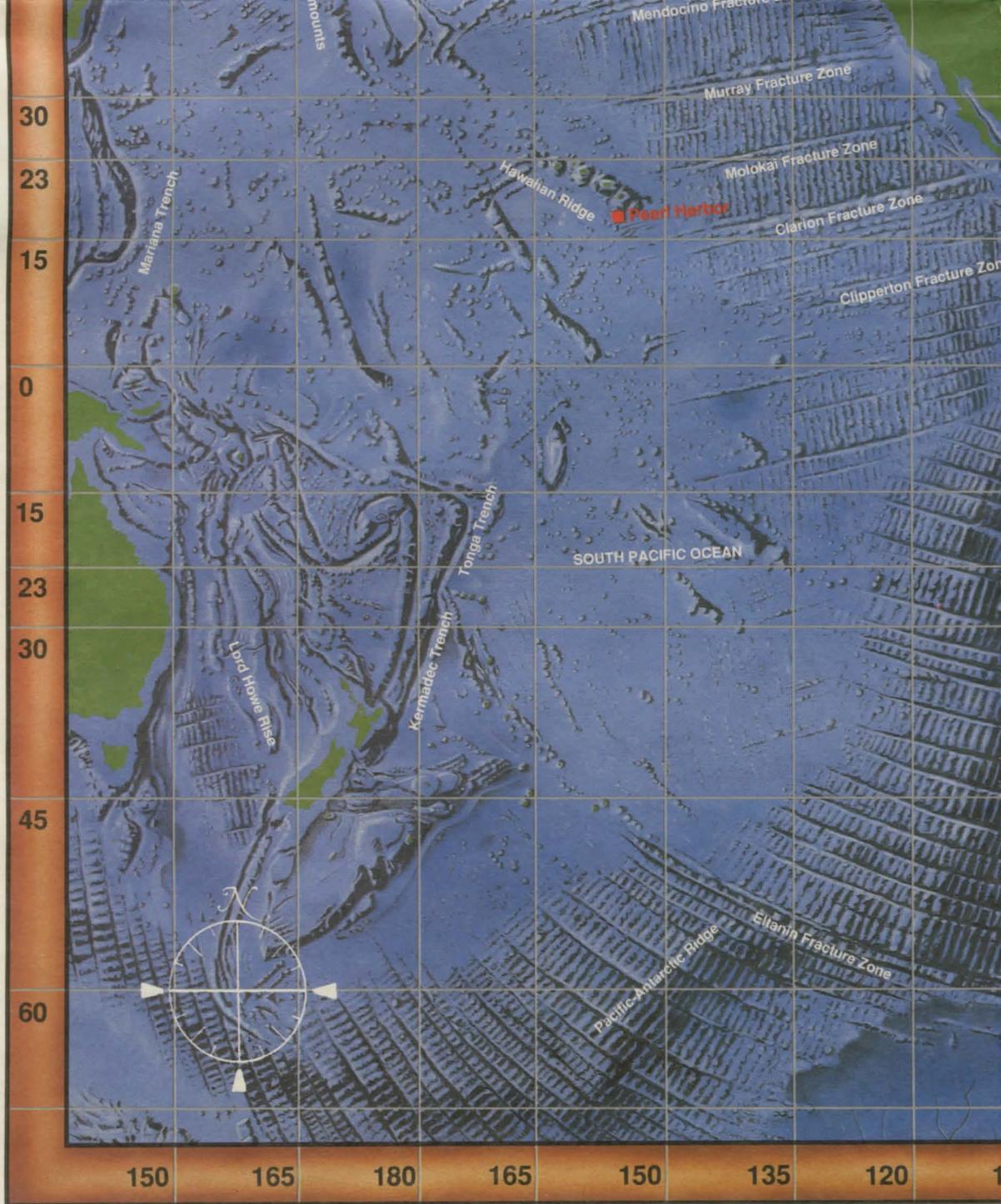
Japan Trench

Kuril Trench

Emperor Sea

Zone





05

90

75

60

45

30

15

0

15

■ Ice Station

Baffin Basin

Labrador Basin

Grand Banks

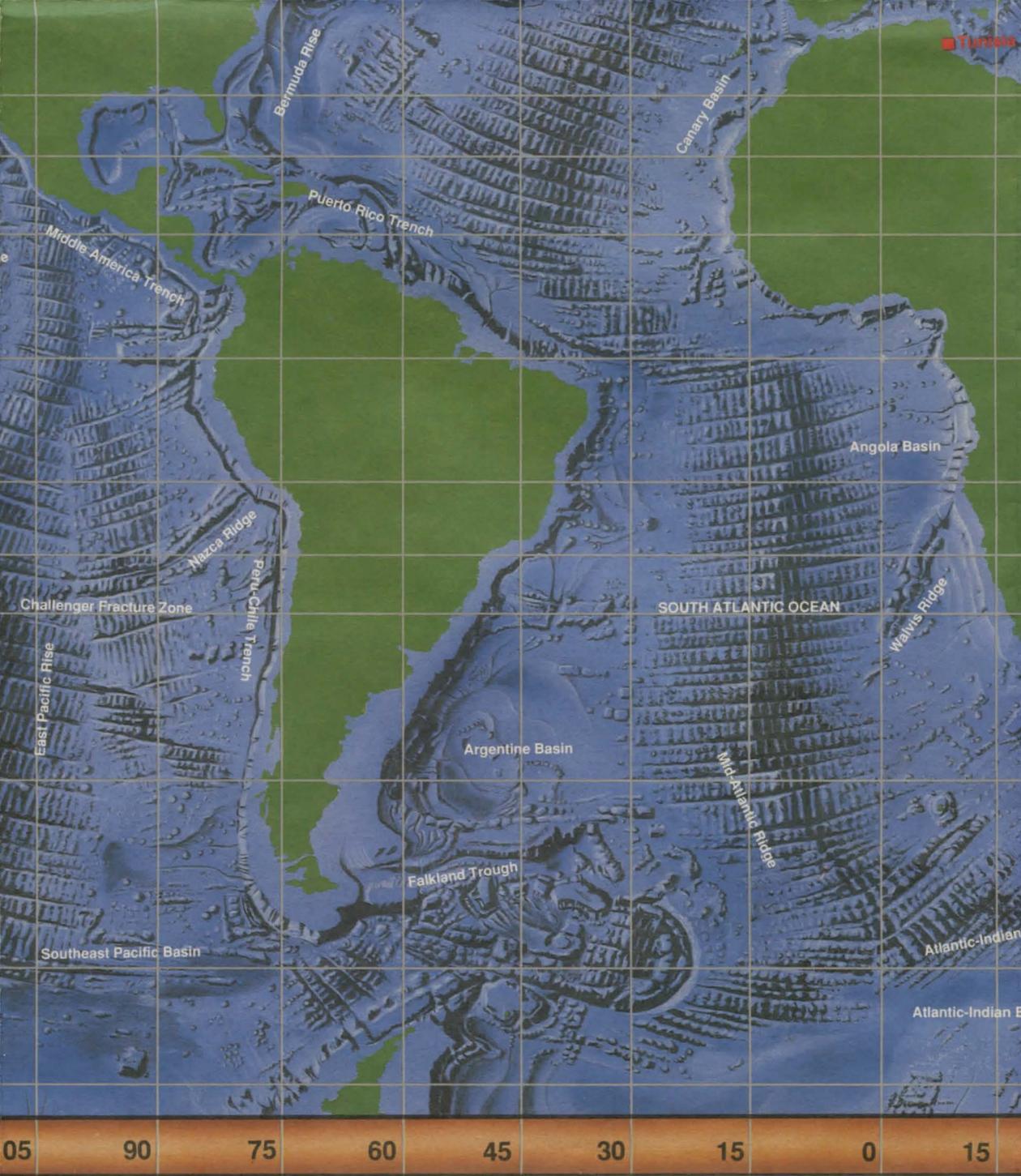
Reykjanes Ridge

■ Iceland

Dogger Bank

NORTH ATLANTIC OCEAN





05 90 75 60 45 30 15 0 15

30

85

80

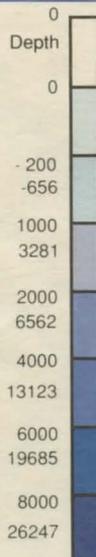
75

70

60

45

The Oceans



The Earth: Land and Water

	Total Area			Area of Oceans and Seas	
	km ²	sq. mi.	%	km ²	sq. mi.
Earth	510,100,000	197,000,000	29.3	360,700,000	139,300,000
N. Hemisphere	255,050,000	98,500,000	41.6	149,004,350	57,550,000
S. Hemisphere	255,050,000	98,500,000	17.0	211,695,650	81,750,000

Oceans, Seas, and Gulfs

Name	Area		Greatest Depth	
	km ²	sq. mi.	m	ft
Pacific Ocean	165,200,000	63,800,000	11,022	36,161
Atlantic Ocean	82,400,000	31,800,000	9,220	30,249
Indian Ocean	74,900,000	28,900,000	7,450	24,442
Arctic Ocean	14,000,000	5,400,000	5,450	17,881
Arabian Sea	3,863,000	1,492,000	5,800	19,029
South China Sea	3,447,000	1,331,000	5,560	18,241
Caribbean Sea	2,754,000	1,063,000	7,680	25,197
Mediterranean Sea	2,505,000	967,000	5,020	16,470
Bering Sea	2,270,000	876,000	4,191	13,750
Bengal, Bay of	2,172,000	839,000	5,258	17,251
Okhotsk, Sea of	1,580,000	610,000	3,372	11,063
Norwegian Sea	1,547,000	597,000	4,020	13,189
Mexico, Gulf of	1,544,000	596,000	4,380	14,370
Hudson Bay	1,230,000	475,000	259	850
Greenland Sea	1,205,000	465,000	4,846	15,899



USS BLACK HAWK/COARSEGOLD CLASS

TOTAL BUILT: 1
LAUNCHED: 1997
COMMISSIONED: 1999

DISPLACEMENT:
4,000 TONS
DIMENSIONS:
150 x 25 x 25 FT.

ENGINE:
1 HYPER DYNE PRESSURIZED-WATER COOLED S6G REACTOR

SPEED, KNOTS:
60+ SUBMERGED

MISSILES:
8 "HARPOON" ACTIVE RADAR HOMING TO 150 NM AT 0.9 MACH; WARHEAD 500 LB.

TORPEDOES:
4-21" TUBES MIDSHIPS. STING RAY 8; ACTIVE/PASSIVE SONAR HOMING RANGE (35 NM) AT 90 KNOTS; WARHEAD 587 LB.; DEPTH TO 2,950'.
TOTAL OF 26 WEAPONS CAN BE TUBE-LAUNCHED, FOR EXAMPLE-8 TOMAHAWK, 4 HARPOON, 14 TORPEDOES.

MINES:
CAN LAY MINES

COUNTERMEASURES:
DECOYS; EMERSON ELECTRIC MK 2; TORPEDO DECOY ESM: BRD-7; DIRECTION FINDING. WELR-12; RADAR WARNING. WLR-9A; INTERCEPT

FIRE CONTROL:
UYK-7 COMPUTER, MK 117 MOD 10 TORPEDO FIRE CONTROL SYSTEM. FITTED WITH WSC-3 SATELLITE COMMUNICATIONS TRANSCIVER.

RADARS:
SURFACE SEARCH/NAVIGATION/FIRE CONTROL: SPERRY BPS 15A; I/J BAND.

SONARS:
IBM BQQ 5D; PASSIVE/ACTIVE SEARCH AND ATTACK; LOW FREQUENCY. AMETEC BQS 15; ACTIVE CLOSE-RANGE INCLUDING ICE DETECTION; HIGH FREQUENCY.





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