

Kuģu vadīšana un sardzes dienests

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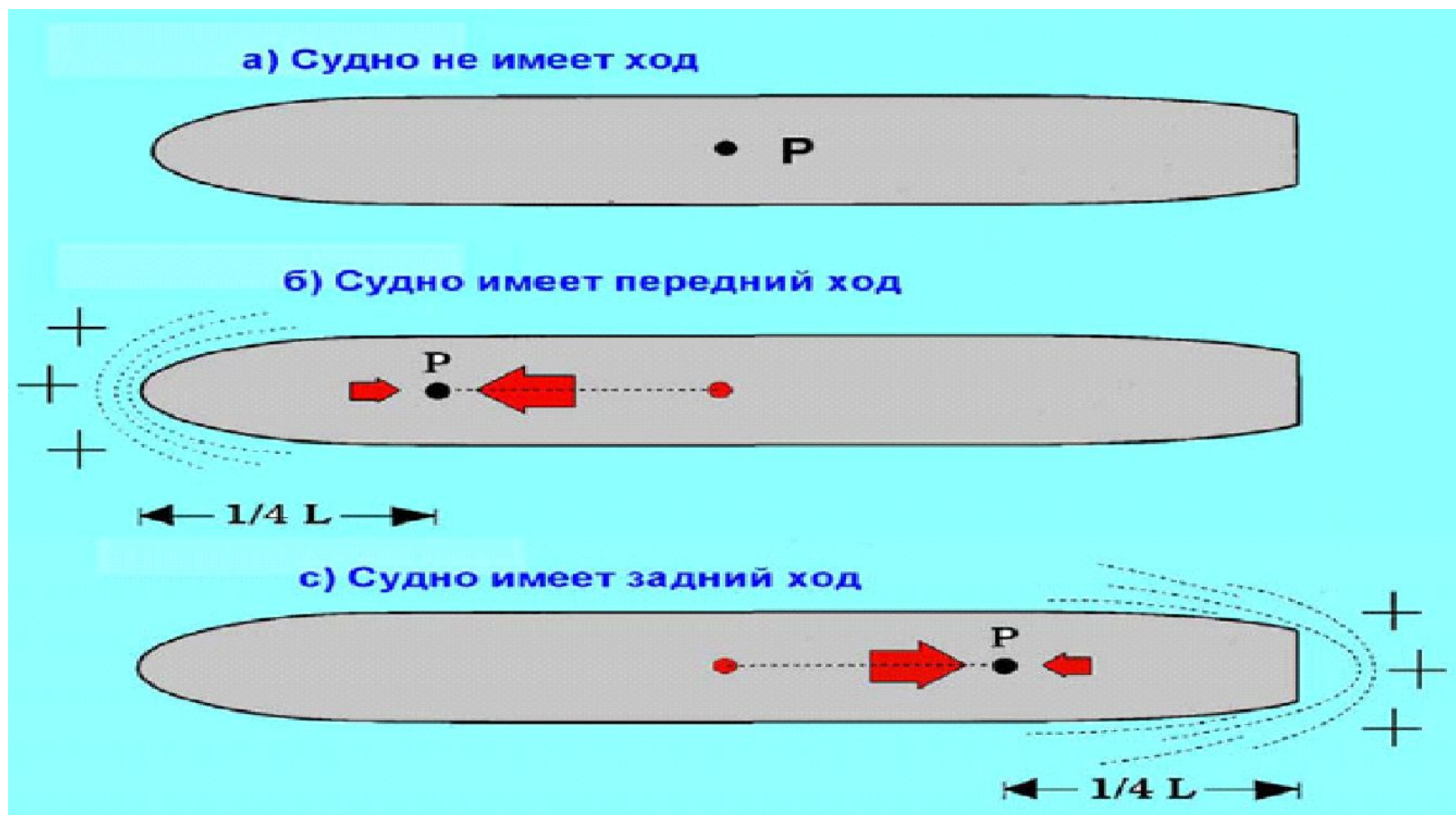
- Jūras prakse
- Kuģa manevrēšana dažādos kuģošanas apstākļos
- Kuģu sadursmju brīdināšana
- Sardzes dienesta organizācija un ekipāžas rīcība avārijas situācijās

Vispārēja saprašana un manevrēšanas noteikšana

- Kuģa manevrētspēja
- Manevrēšana
- Kuģa gājība
- Kuģa ātrums
- Vadāmība
- Noturēšanās kursā

Vispārēja saprašana un manevrēšanas noteikšana

- Grozāmība



Uz kuģi darbojošos spēku un momentu raksturojums

- Virzošie spēki
- Ārējie spēki
- Reaktīvie spēki un momenti
- Neinercionālie spēki un momenti

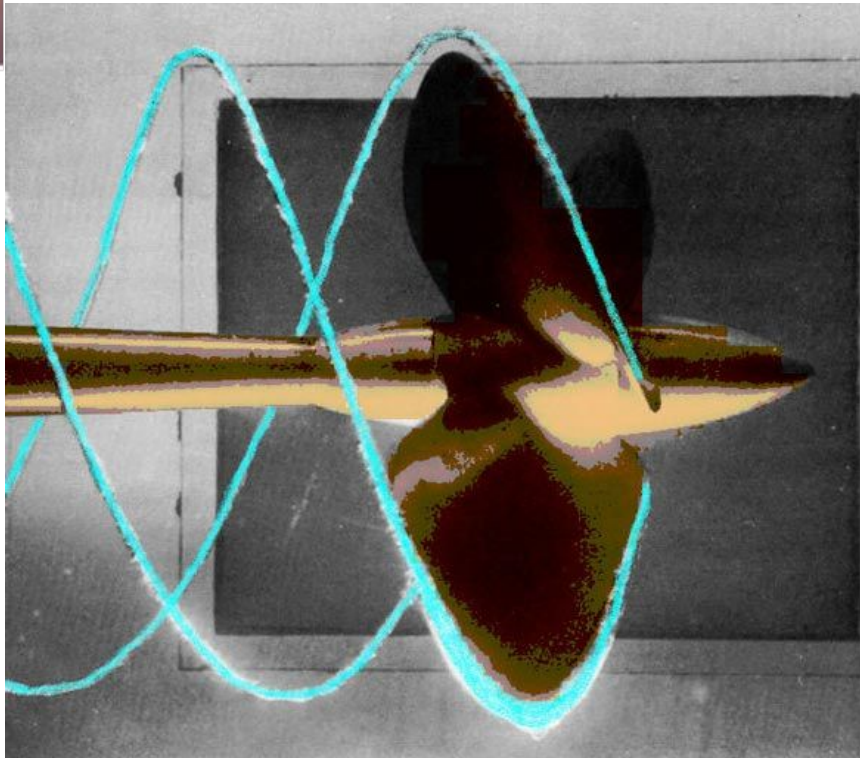
Ārējie spēki



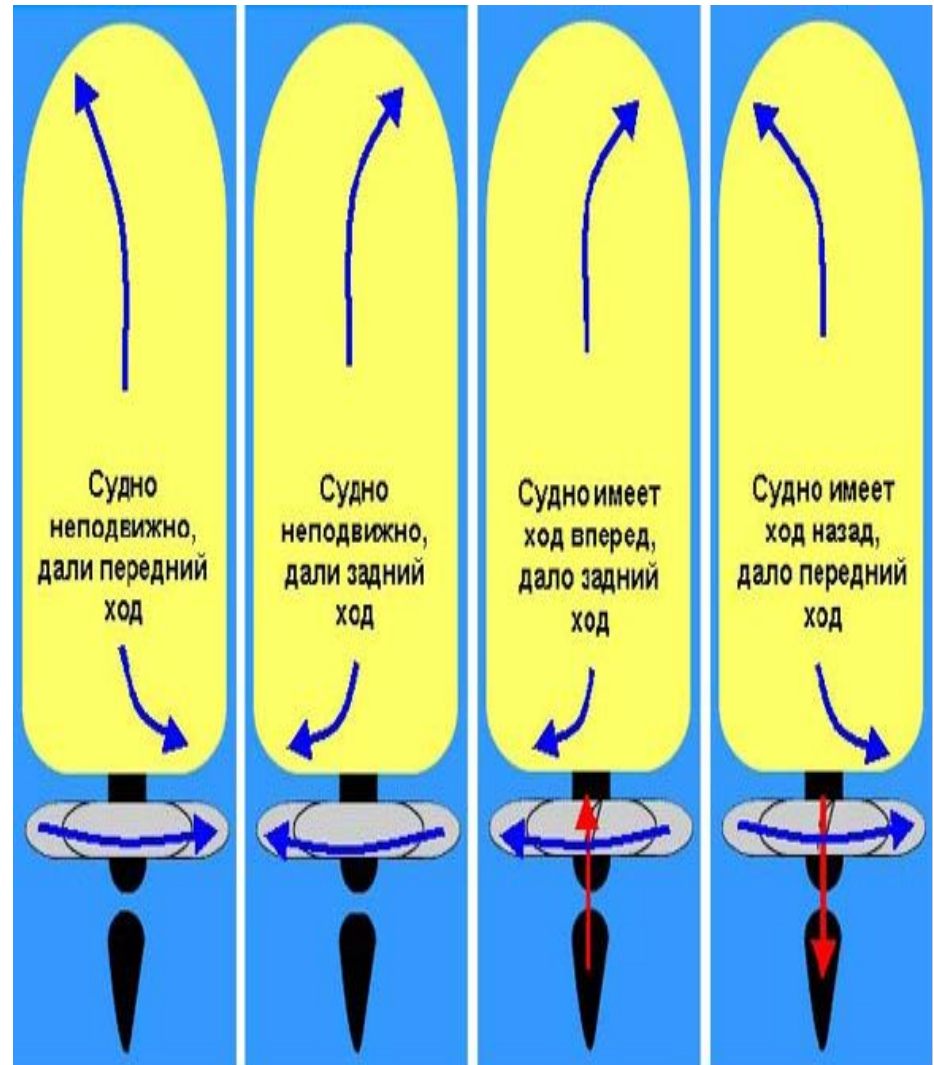
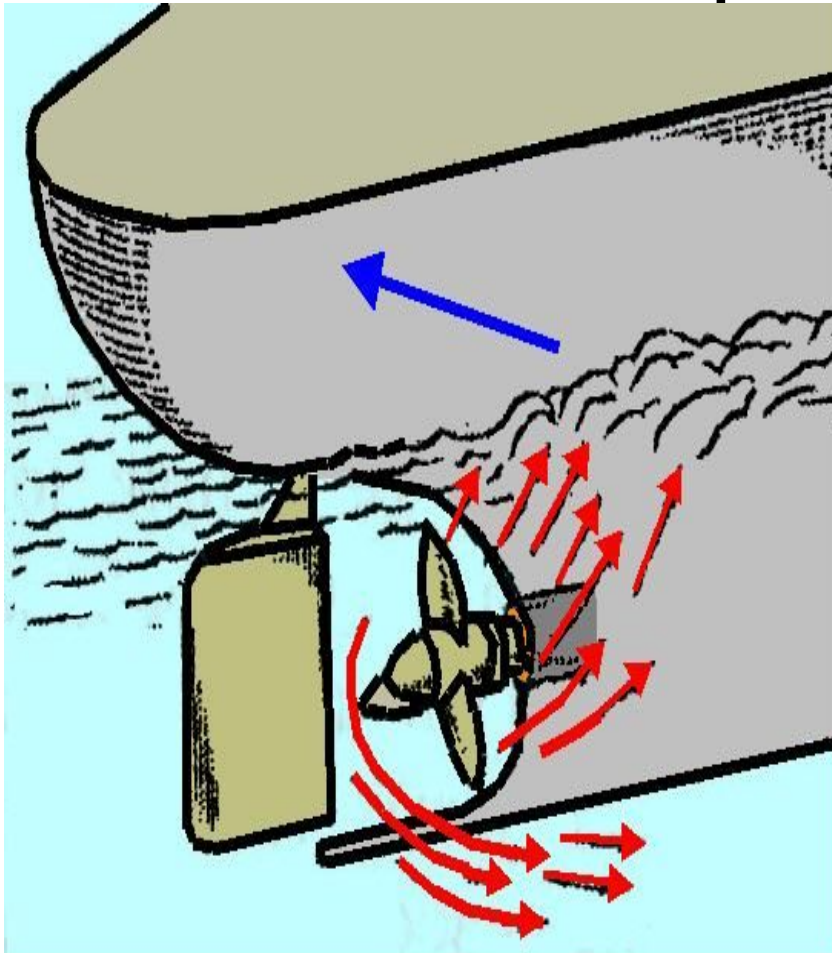
Рис. 1.20. Воздействие внешних сил на корпус судна

Dzenskrūves vilkme un kuģa kustības pretestība

- $N_n = R \cdot V$, kur
- R – pretestības spēks
- V – pārvietošanās ātrums



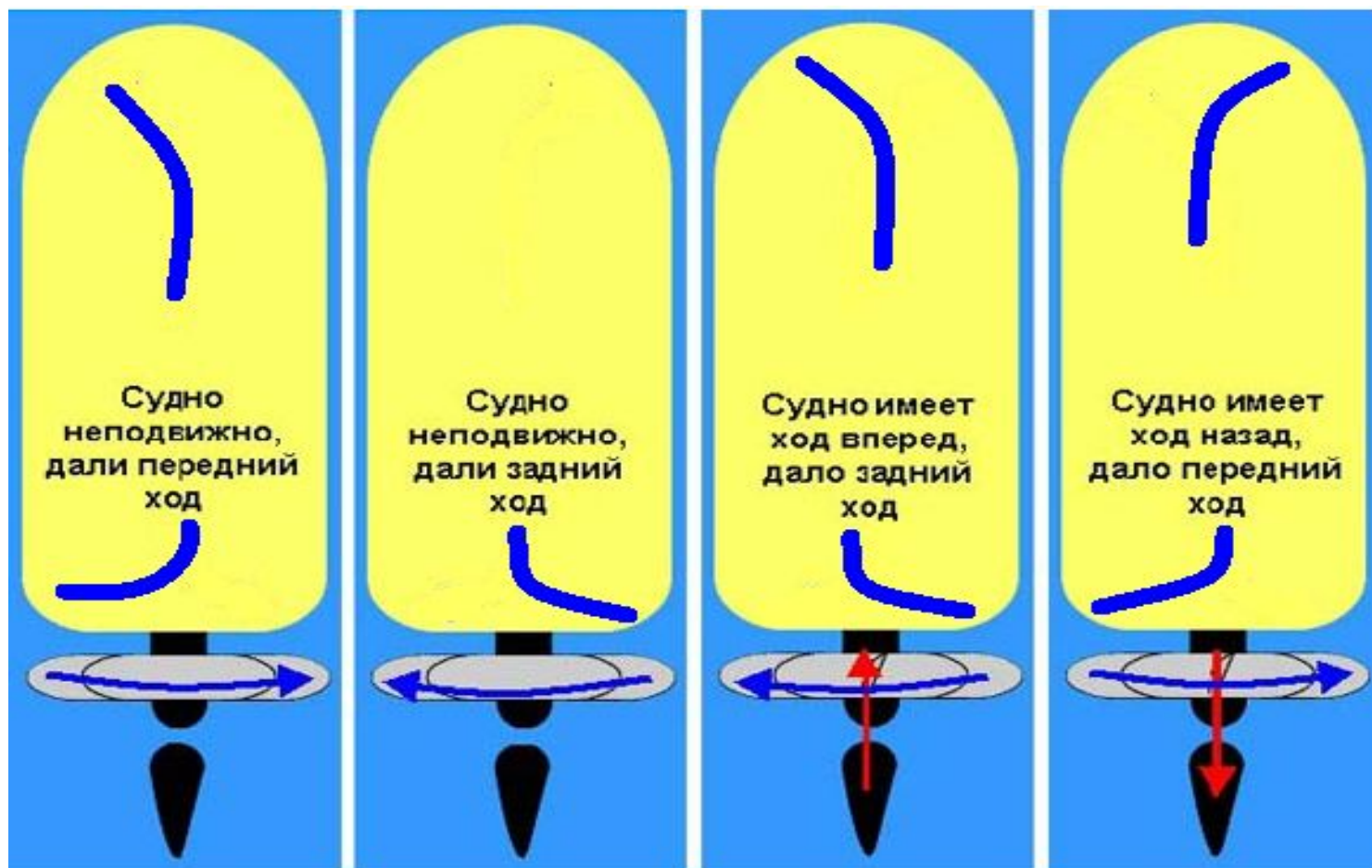
Kuġa, ar vienu dzenskrūvi vadības īpatnības



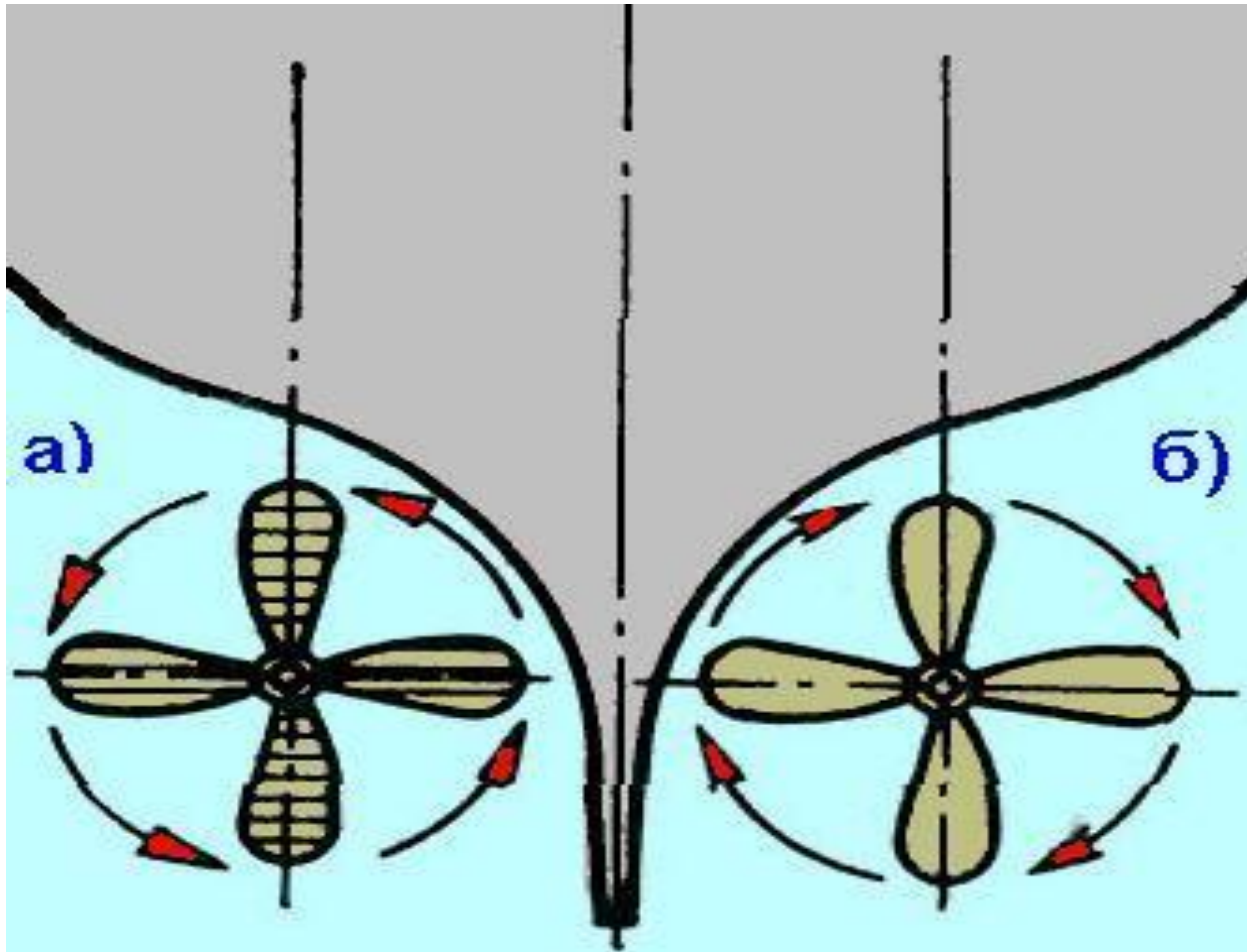
Regulējamā soļa dzenskrūve (RSD)



Kuģi, ar regulējamā soļa dzenskrūvi, vadības īpatnības

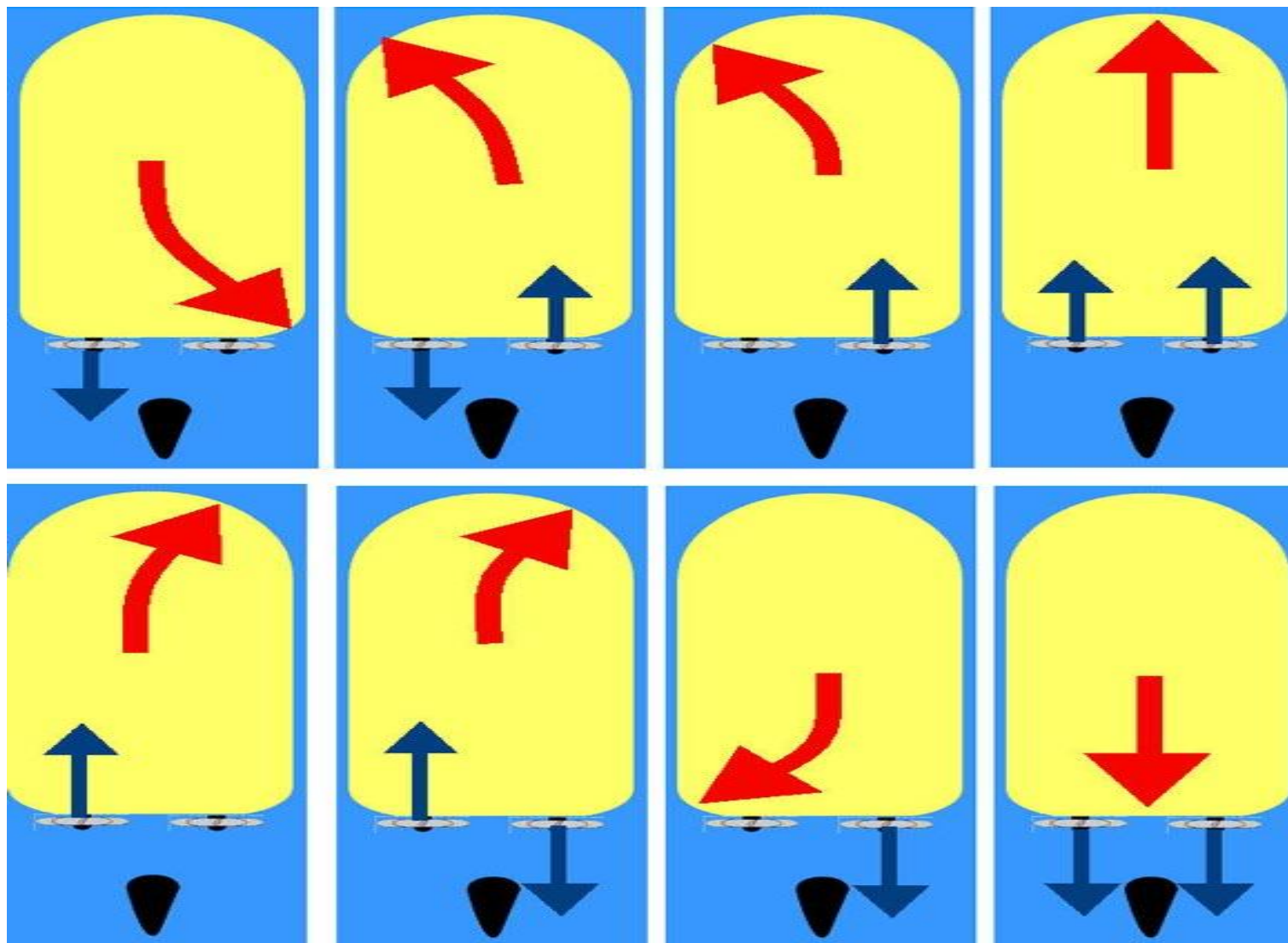


Kuģi, ar divām dzenskrūvēm, vadīšanas īpatnības

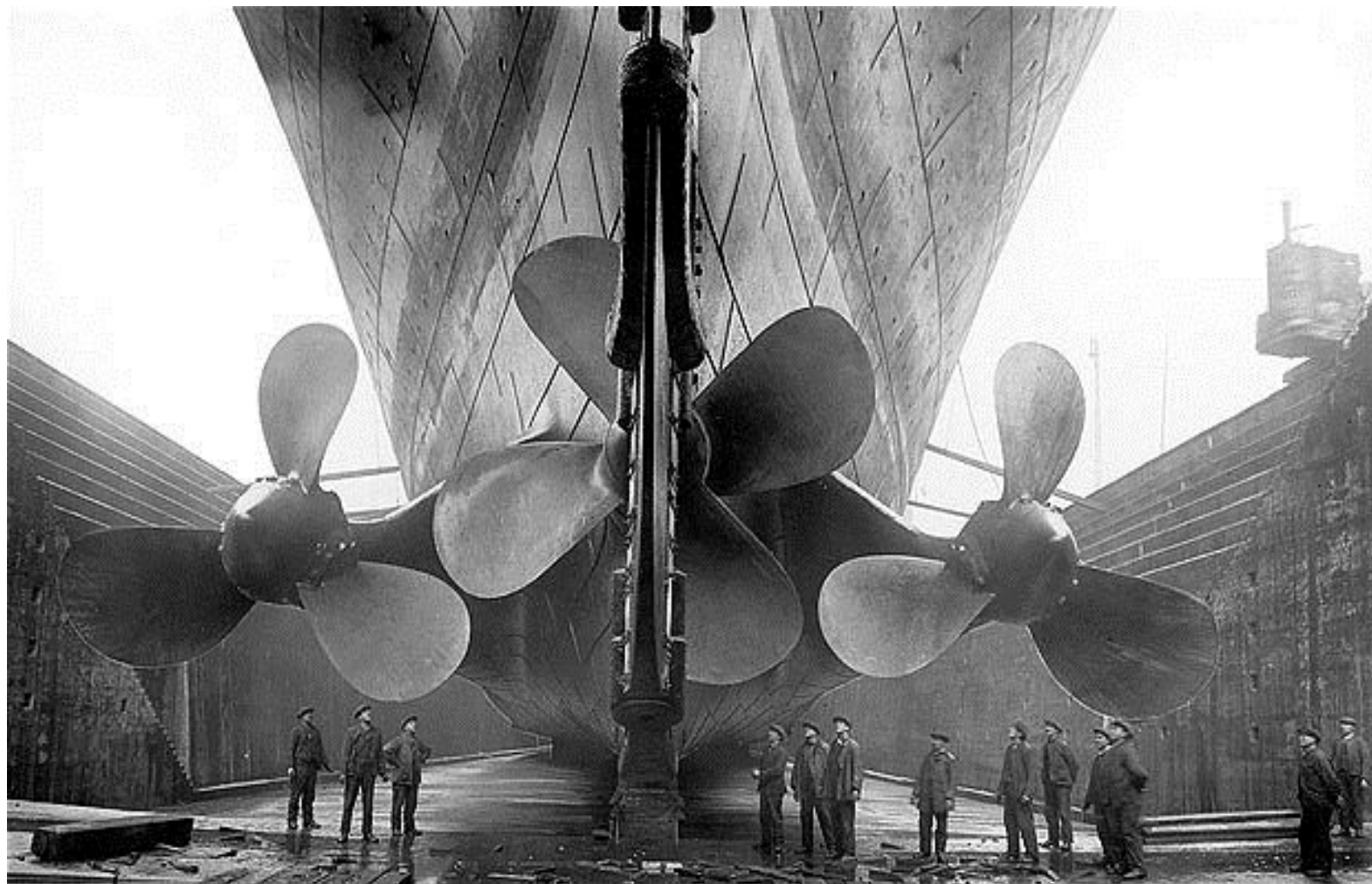




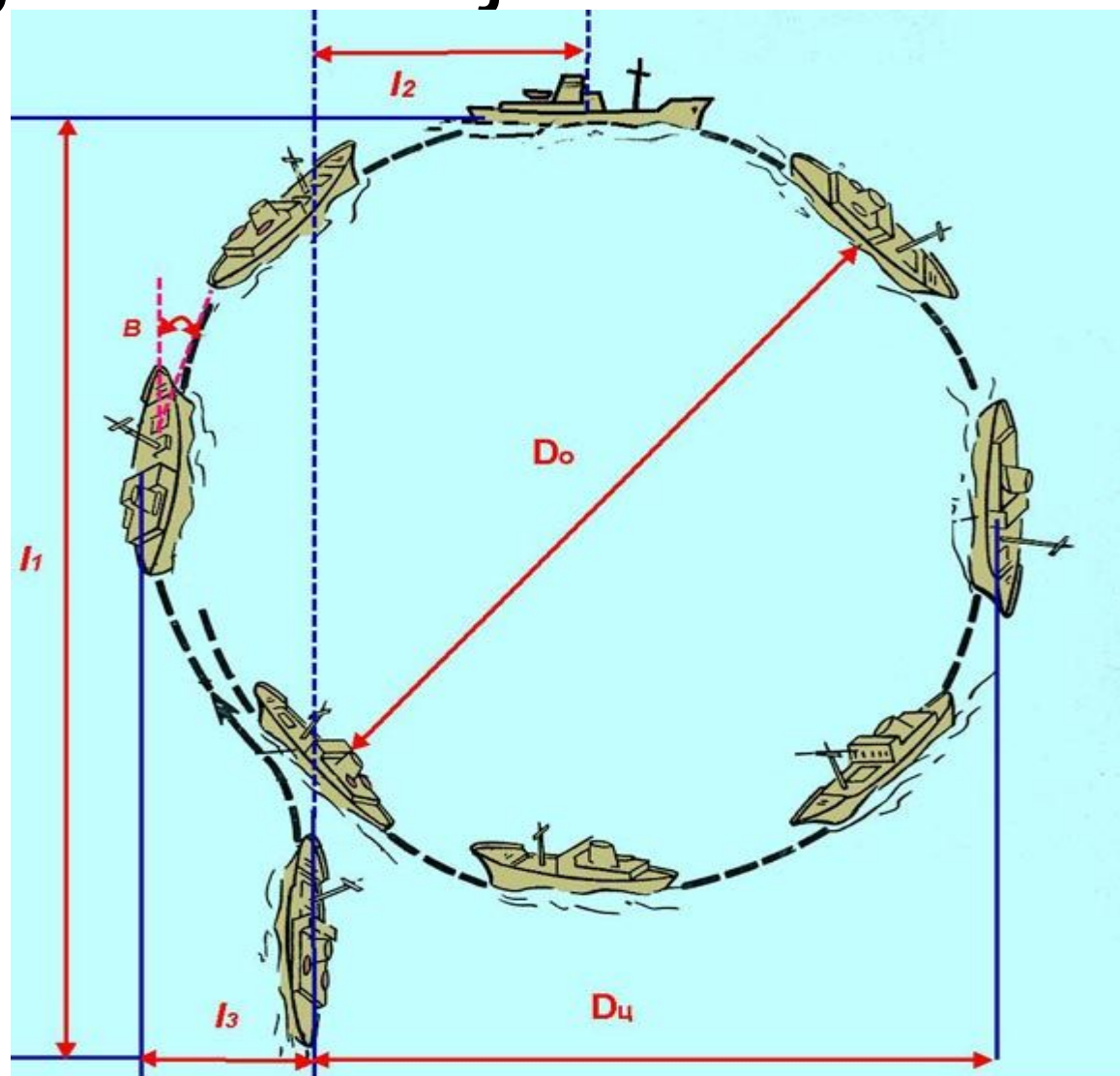
Kuģi, ar divām dzenskrūvēm, vadīšanas īpatnības



Kuģi, ar trim dzenskrūvēm, manevrēšanas īpatnības

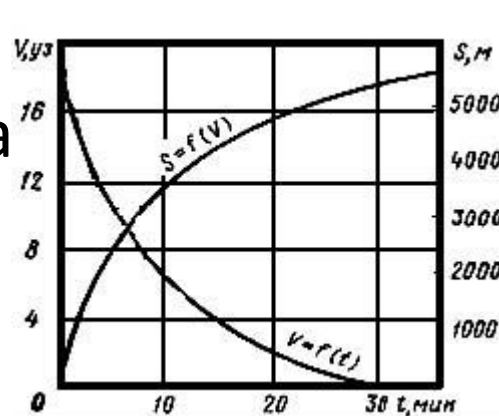


Kuģa cirkulācija un tās elementi

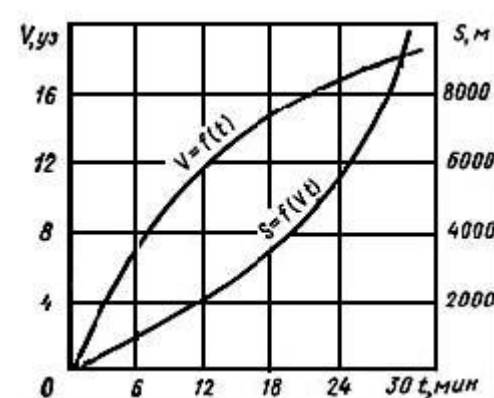


Kuġa inerces Īpašības.

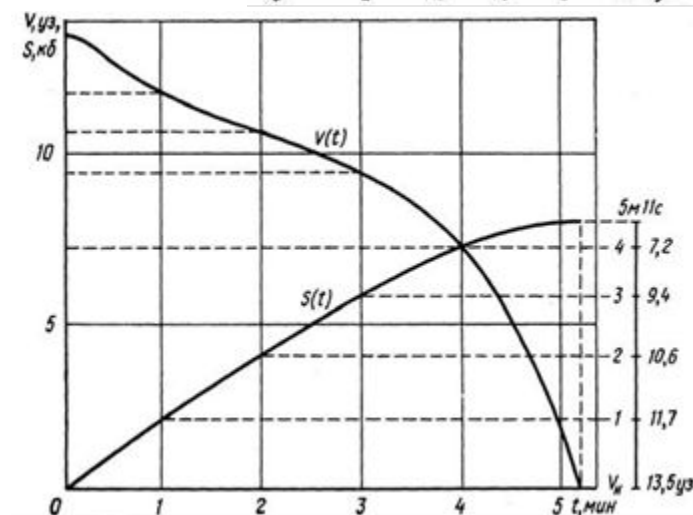
- Pasīvā bremzēšana



- Kuġa ieskriešanās



- Aktīvā bremzēšana



Gaitas gradācija

- Dead slow ahead
- Slow ahead
- Halh ahead
- Full manoeuvring ahead
- Full ahead for sea
- Emergency full ahead of Full ahead overall

Kuģa manevrēšanas īpašību informācija

- Pilot card
- Manevrēšanas īpašību tabula
- Manevrēšanas elementu formulārs

Pilot card

ABC TANKERS AND FREIGHTERS
INTERNATIONAL LTD.

Attachment to VP-B-7
CHECKLIST VP-B-7-08/1/03
PAGE 1 OF 1

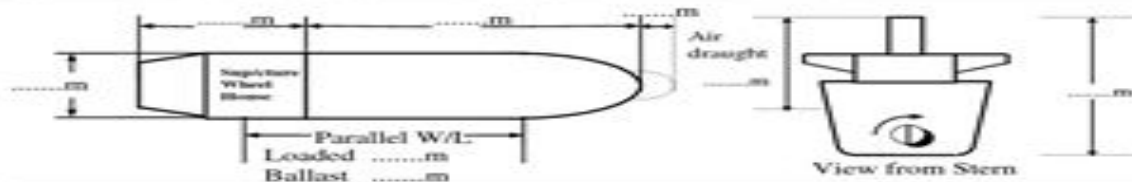
M/V	PORT:	DATE:
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PILOT CARD

Call sign:	Deadweight: _____ tonnes	Year built:
Draught: AFT _____ m	FWD _____ m	Displacement: _____ tonnes

SHIP'S PARTICULARS

Length overall _____ m	Breadth _____ m	Bulbous bow Yes ☐ / No ☐
Anchor chain:		
Port shackles	Starboard shackles	Stern shackles



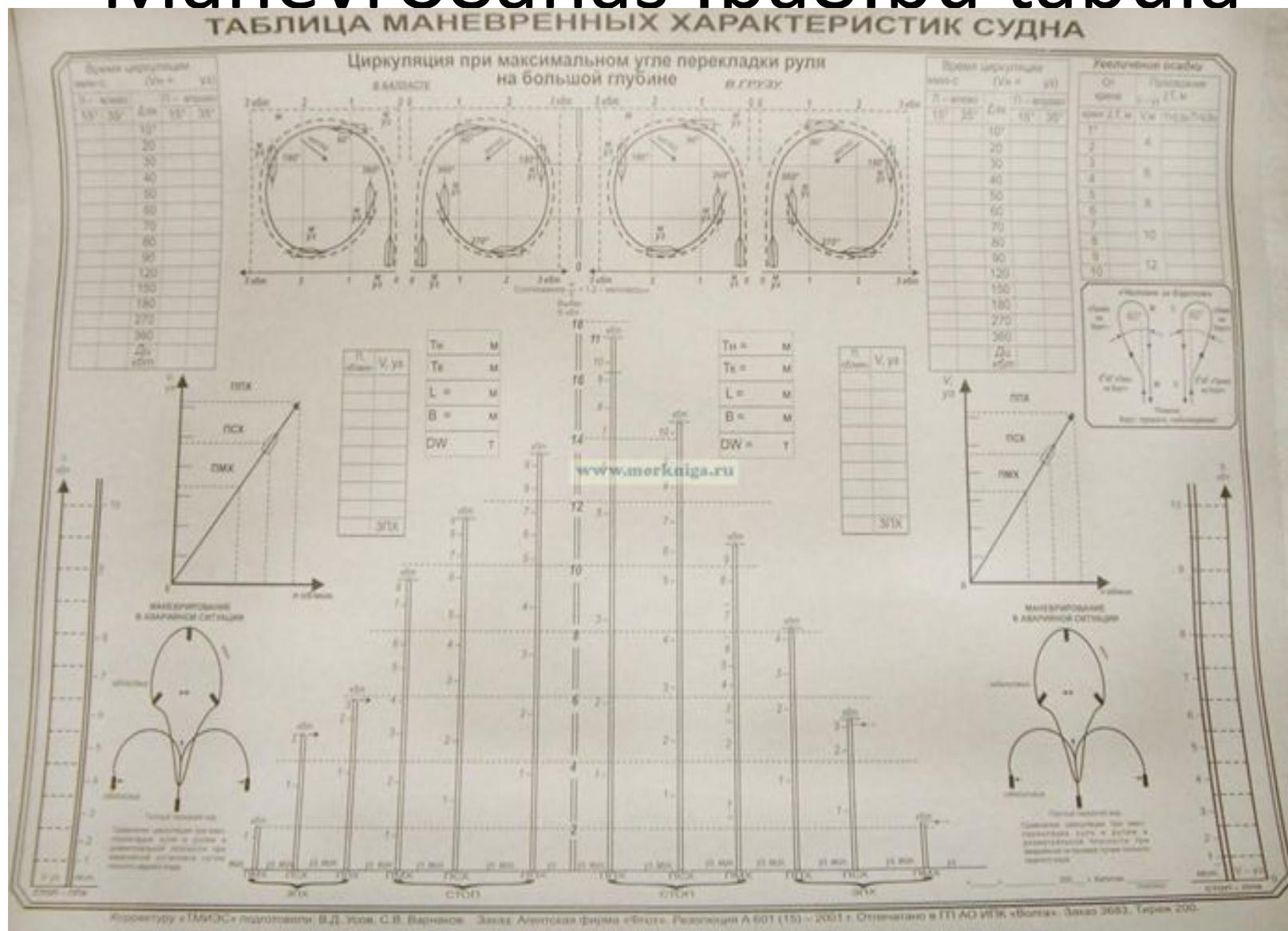
FOLLOWING EQUIPMENT FULLY OPERATIONAL.

Anchor(s)		APRA	
Whistle(s)		Echo-sounder	
Steering Gear Motors		Speed Log	
Bow Thruster		Gyro Compass System	
Two Generators Operating		Constant Gyro Error (static)	
Engine Telegraphs		Magnetic Compass System	
VHF's		RPM Indicator & Templates	
Radar 3 cm		Rudder Angle Indicator & Repeaters	
Radar 10 cm		Rate of Turn	
Type of Engine	Maximum Power	kW (HP)	
Manoeuvring engine order	Rpm	Speed (knots)	
		Loaded	Ballast
Full ahead			
Half ahead			
Slow ahead			
Dead slow ahead			
Dead slow astern			
Slow astern		Time limit astern _____ min	
Half astern		Full ahead to full astern _____ sec	
Full astern		Max. no. of consec. Starts _____	
		Minimum Rpm _____ knots	
		Astern power _____ % ahead	

The Master _____

The Pilot _____

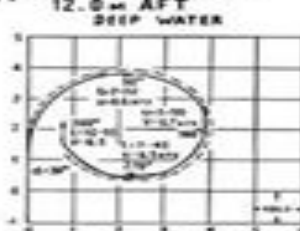
Manevrēšanas Īpašību tabula



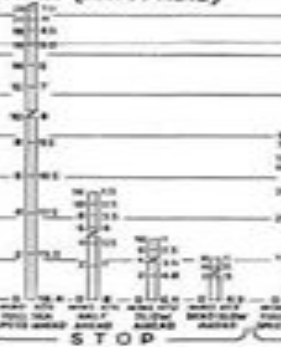
LOADED

ЦИРКУЛЯЦИИ

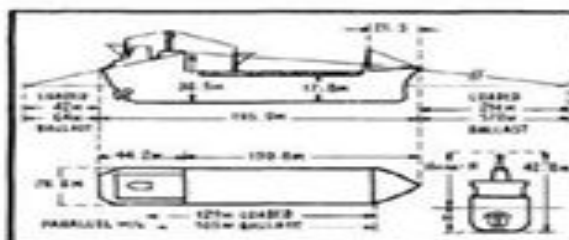
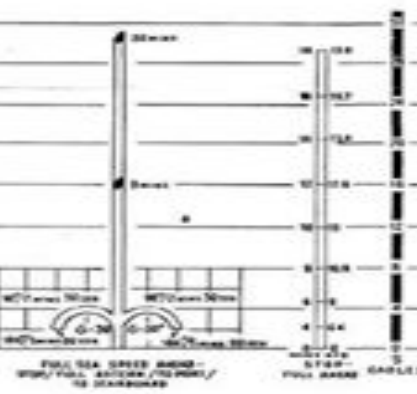
DRAUGHT:

[illegible]

ТЕ ХАРАКТЕРИСТИКИ (НАТУРНЫЕ)



Parameter	EEV	1992 1990
gross GPP	59	4.3
gross NPP	39	4.5
gross RPP	40	5.8
gross RPP	42	6.4
gross RPP	42	7.0
gross RPP	42	7.7
gross RPP	42	8.4
gross RPP	42	9.1
gross RPP	42	9.8
gross RPP	42	10.5
gross RPP	42	11.2
gross RPP	42	11.9
gross RPP	42	12.6
gross RPP	42	13.3
gross RPP	42	14.0
gross RPP	42	14.7
gross RPP	42	15.4
gross RPP	42	16.1
gross RPP	42	16.8
gross RPP	42	17.5
gross RPP	42	18.2
gross RPP	42	18.9
gross RPP	42	19.6
gross RPP	42	20.3
gross RPP	42	21.0
gross RPP	42	21.7
gross RPP	42	22.4
gross RPP	42	23.1
gross RPP	42	23.8
gross RPP	42	24.5
gross RPP	42	25.2
gross RPP	42	25.9
gross RPP	42	26.6
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gross RPP	42	28.7
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gross RPP	42	297.5
gross RPP	42	298.2
gross RPP	42	298.9
gross RPP	42	299.6
gross RPP	42	300.3
gross RPP	42	301.0
gross RPP	42	301.7
gross RPP	42	302.4
gross RPP	42	303.1
gross RPP	42	303.8
gross RPP	42	304.5
gross RPP	42	305.2



DRAUGHT INCREASE			
SQUAT (mm)			
SPEED (KTS)	WIND (KTS)	WIND (KTS)	WIND (KTS)
0	1	2	3
10	0.0	0.0	0.0
20	0.0	0.0	0.0
30	0.0	0.0	0.0
40	0.0	0.0	0.0
50	0.0	0.0	0.0
60	0.0	0.0	0.0
70	0.0	0.0	0.0
80	0.0	0.0	0.0
90	0.0	0.0	0.0
100	0.0	0.0	0.0

PROPULSION PARTICULARS
 TYPE OF ENGINE: DIESEL
 CRITICAL REVOLUTION: 65-75 RPM
 MINIMUM RPM: 30
 TIME LIMIT ASTERN: NIL MIN
 TIME LIMIT AT MAX. REV'S: NIL MIN
 ASTERN POWER: 100% AHEAD
 EMERGENCY FULL AHEAD TO
 FULL ASTERN: 72 SEC
 MAX. NO. OF CONSECUTIVE STARTS: 12
 TYPE OF PROPELLER: CURVE, BRIGHTON

H ₂ O (m)	AREA OF HOLE			
	10	25	500	1800
1	10	25	500	1800
2	14	35	700	1400
3	17	40	800	1700
4	20	50	1000	2000
5	22	55	1100	2200

STEERING PARTICULARS		
TYPE OF RUDDER - MARINER		
MAXIMUM RUDER ANGLE 35°		
TIME NEEDED OVER 10 DEGREES 10 SEC		
WITH 400 KW POWER UNITS 20 SEC		
WITH 270 KW POWER UNITS 22 SEC		
MINIMUM SPEED TO MAINTAIN COURSE		
PROPELLER STOPPED 4.2		
RUDDER ANGLE FOR NEUTRAL EFFECT 5°		

ANCHOR CHAIN	TYPE	NO OF CHAINS	MAX KN OF WEIGHT
	PORT	11	2.3 tons
	STARBOARD	12	2.3 tons

MAN OVERBOARD
4EAOBEX 3A 8OPTOM

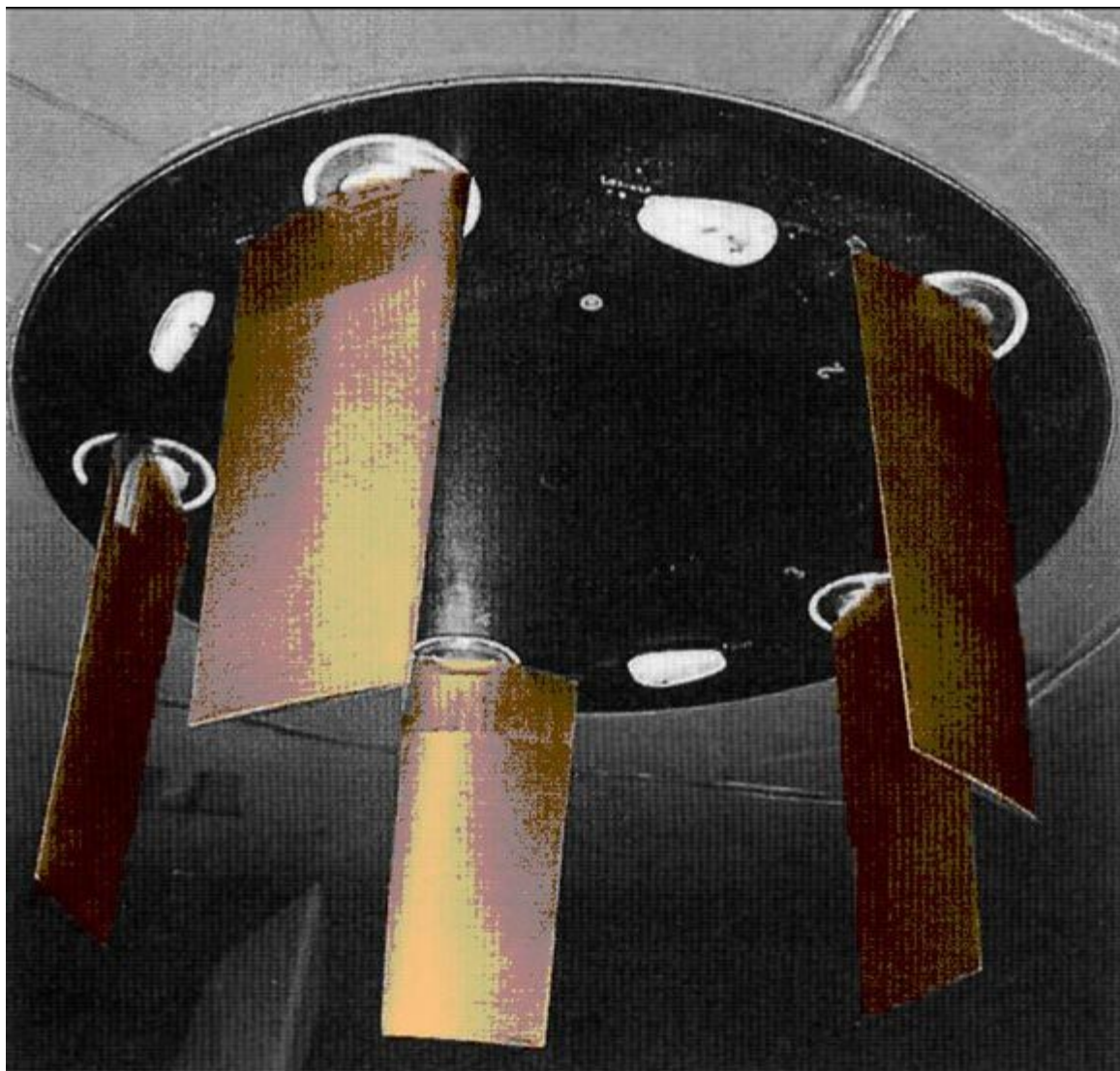
1-50 STEERBOARD 60° 9-30 STEADY 50 60° 9-50 PORT

00-00 DECK POINT 00-00 DECK POINT 00-00 DECK POINT

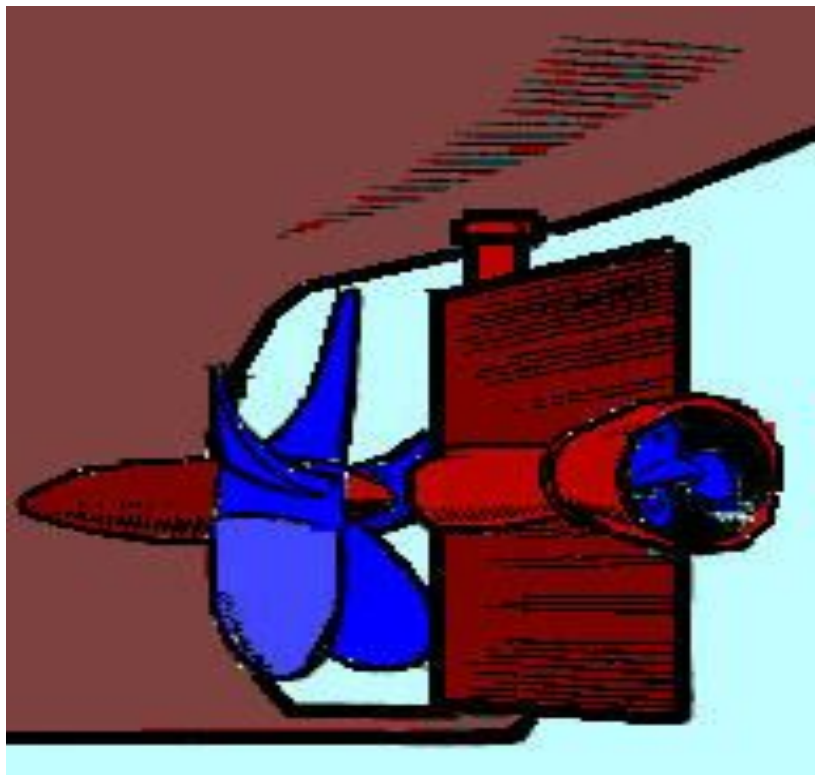
Kuģu manevrēšanas elementu uzlabošanas līdzekļi

- Spārniņu mehānismi
- Aktīvās stūres
- Pagriežamās stūres kolonnas
- Piestūrēšanas ierīces

Spārniņu mehānisms



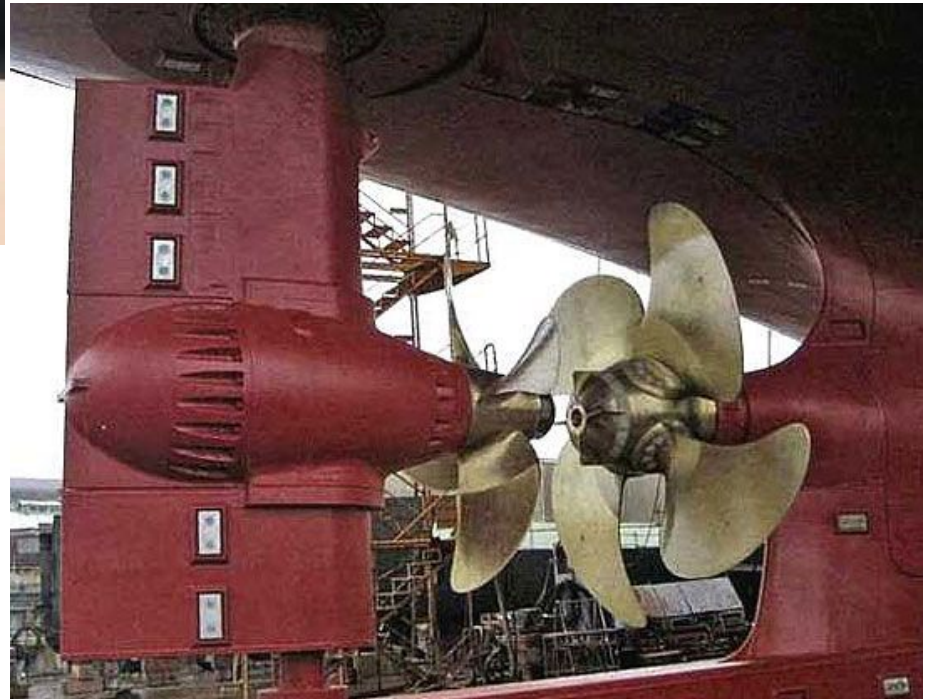
Aktīvās stūres



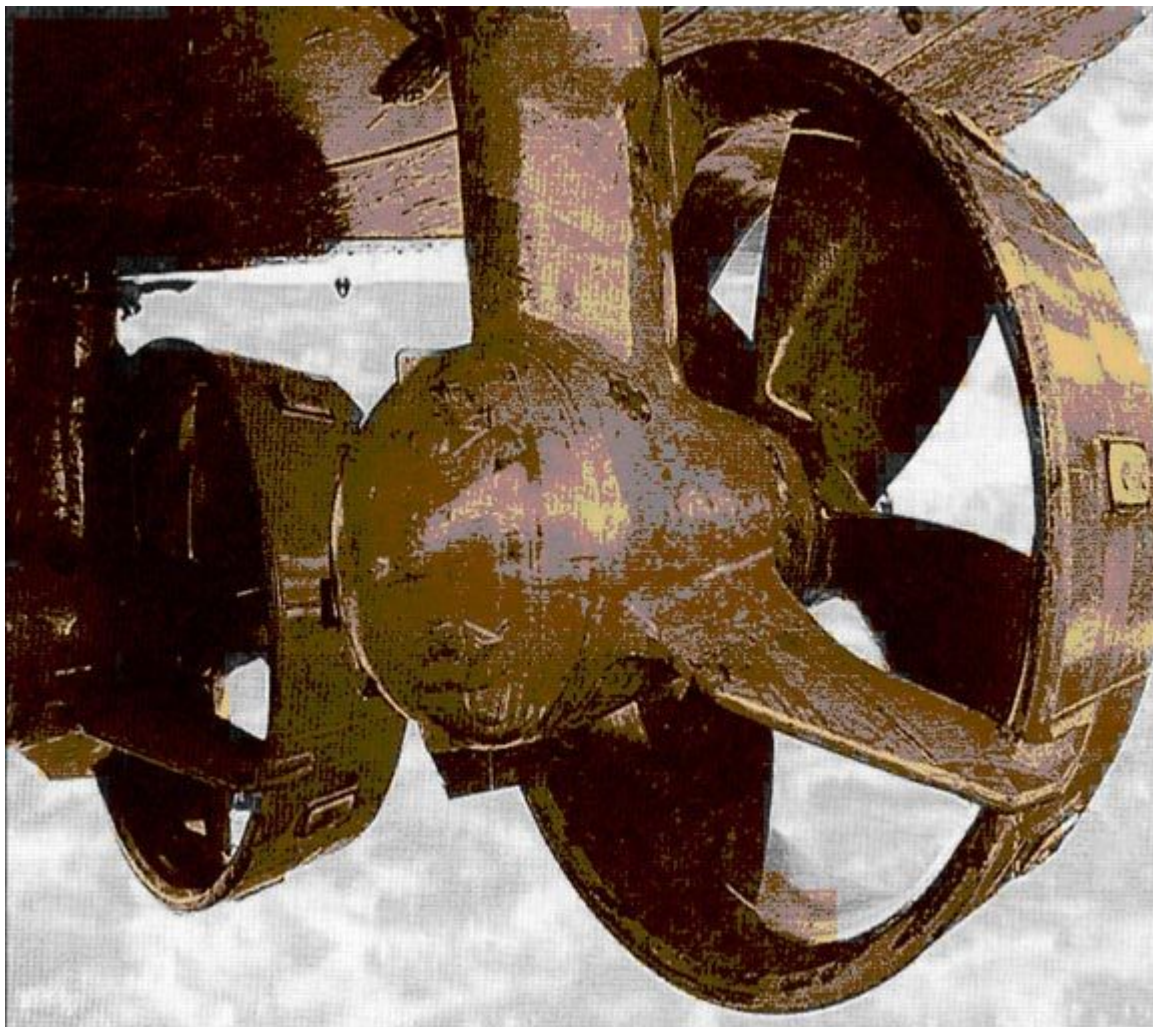
Azipod



CRP(contra-rotating propeller)



Pagriežamās stūres kolonnas



Piestūrēšanas ierīce



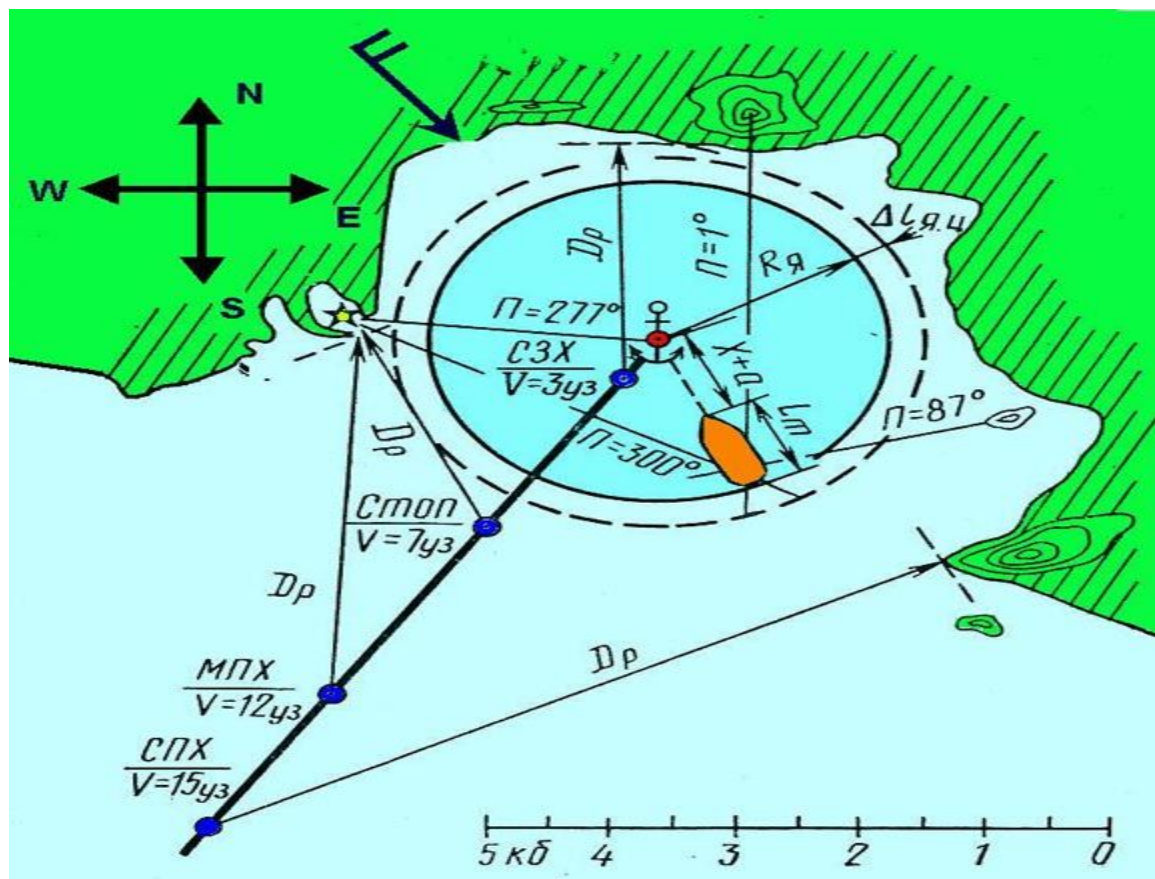
Nolikšanās (noņemšanās) uz enkura

Enkurvietas izvēle:

- Stāvēšanas ilgums
- Stāvēšanas mērķis
- Vēja stiprums un virziens
- Straume un tās gaidāmās izmaiņas
- Dziļums
- Kuģa stāvoklis
- Kuģa iegrime
- Grunts raksturs
- Ūdens līmeņa svārstības
- Viļņu augstums
- Kuģa vietas noteikšanas iespējas stāvēt uz enkura

Enkurvietas akvatorijas izmēri

- $R = (4 \div 5)H + 2L$



Nolikšanās uz enkura labvēlīgos laikapstākļos

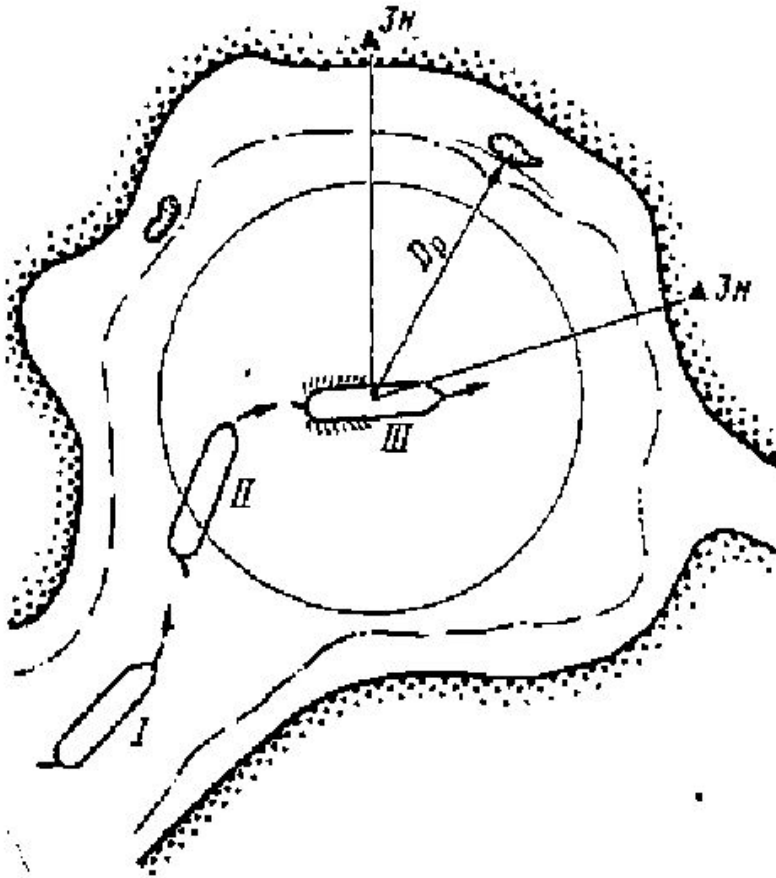
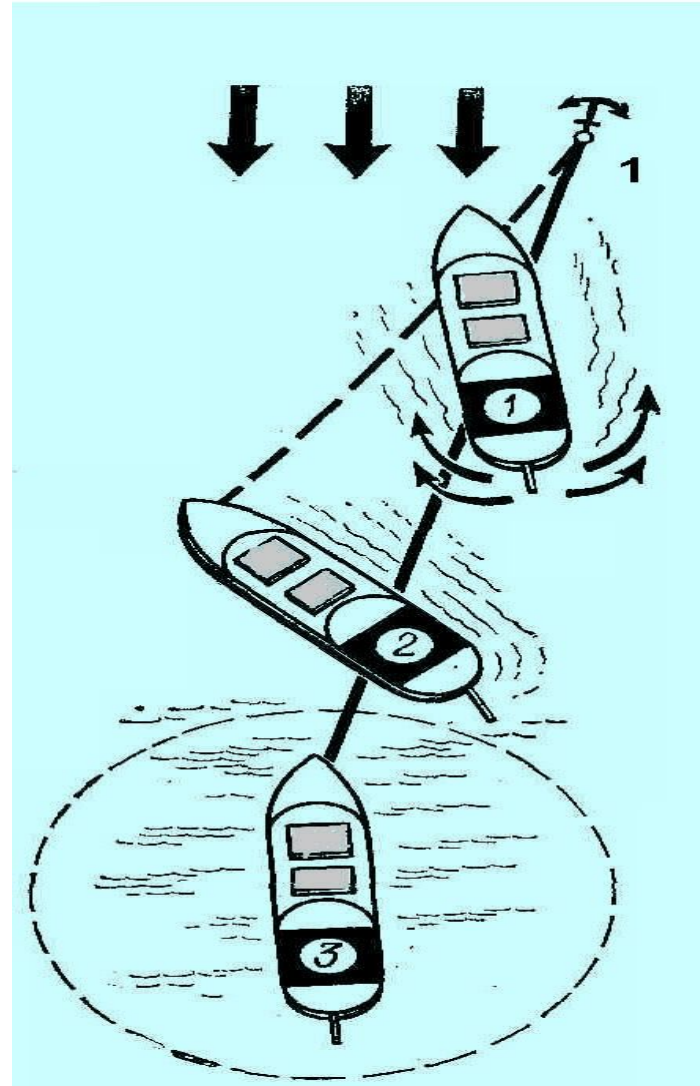


Рис 175. Постановка судна на якорь



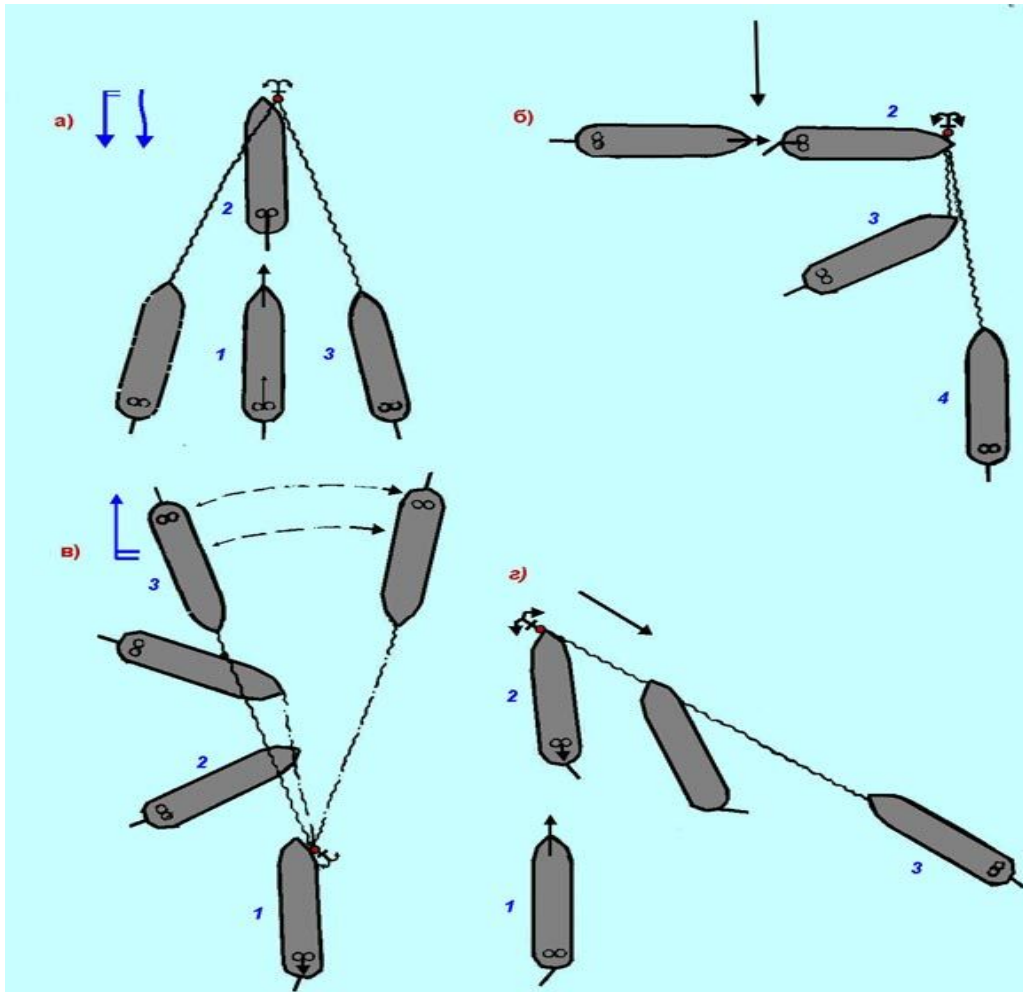
Nostāšanās pie vēja vai/un straumes

а – pie pretēja vēja un straumes

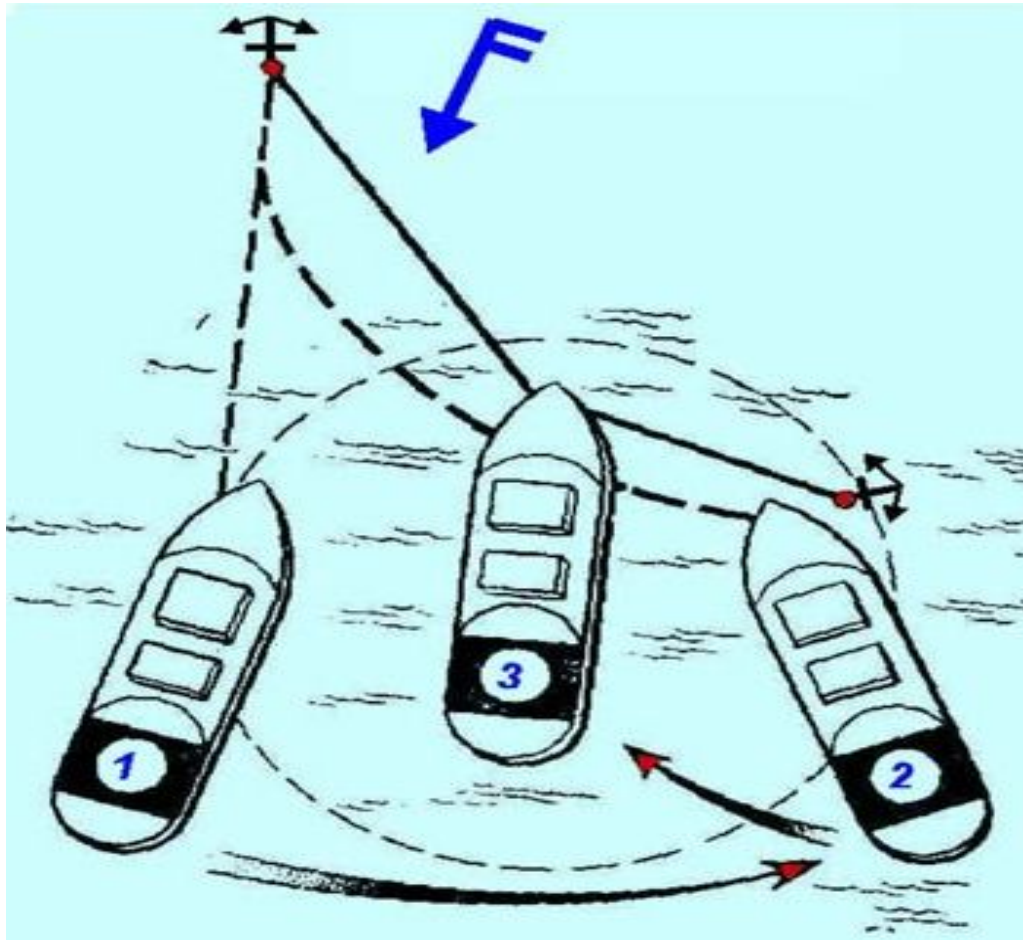
б – при ветре галфинд левого
борта

в – при попутном ветре и течения

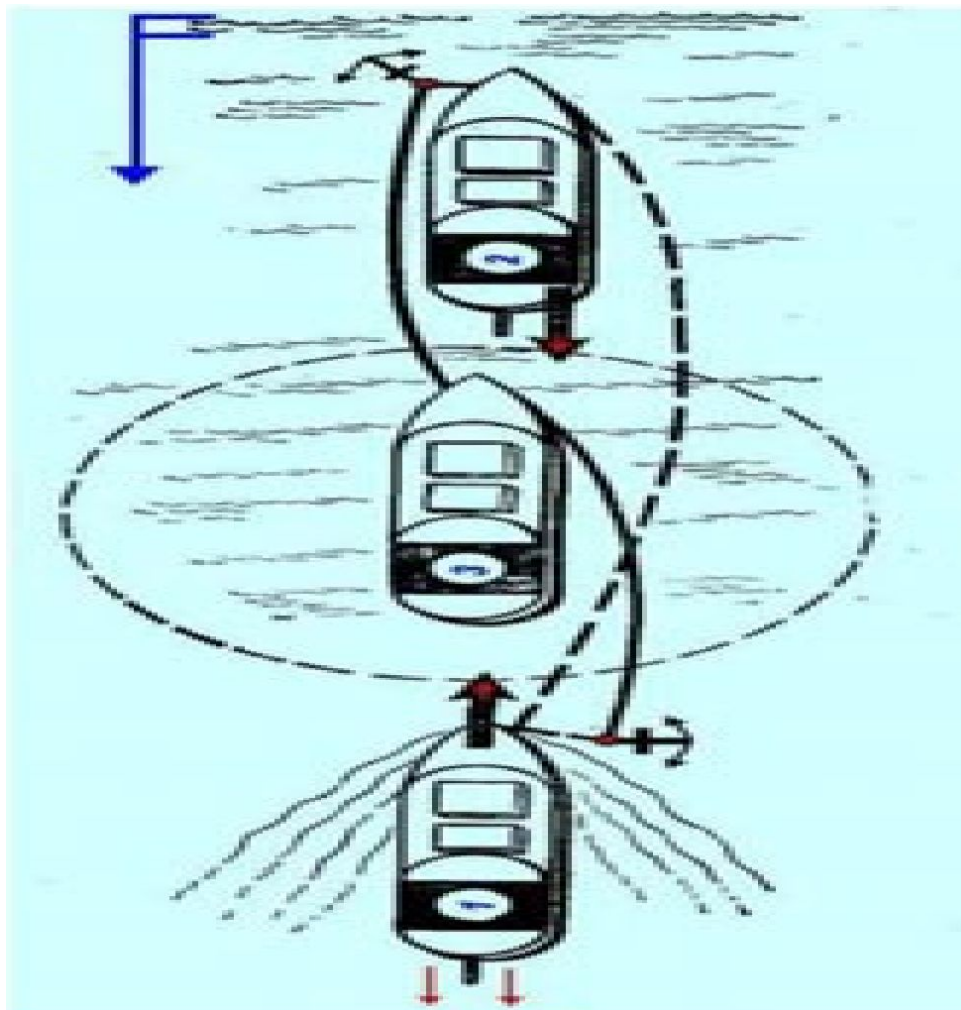
г – при ветре бейдевинд левого
галса



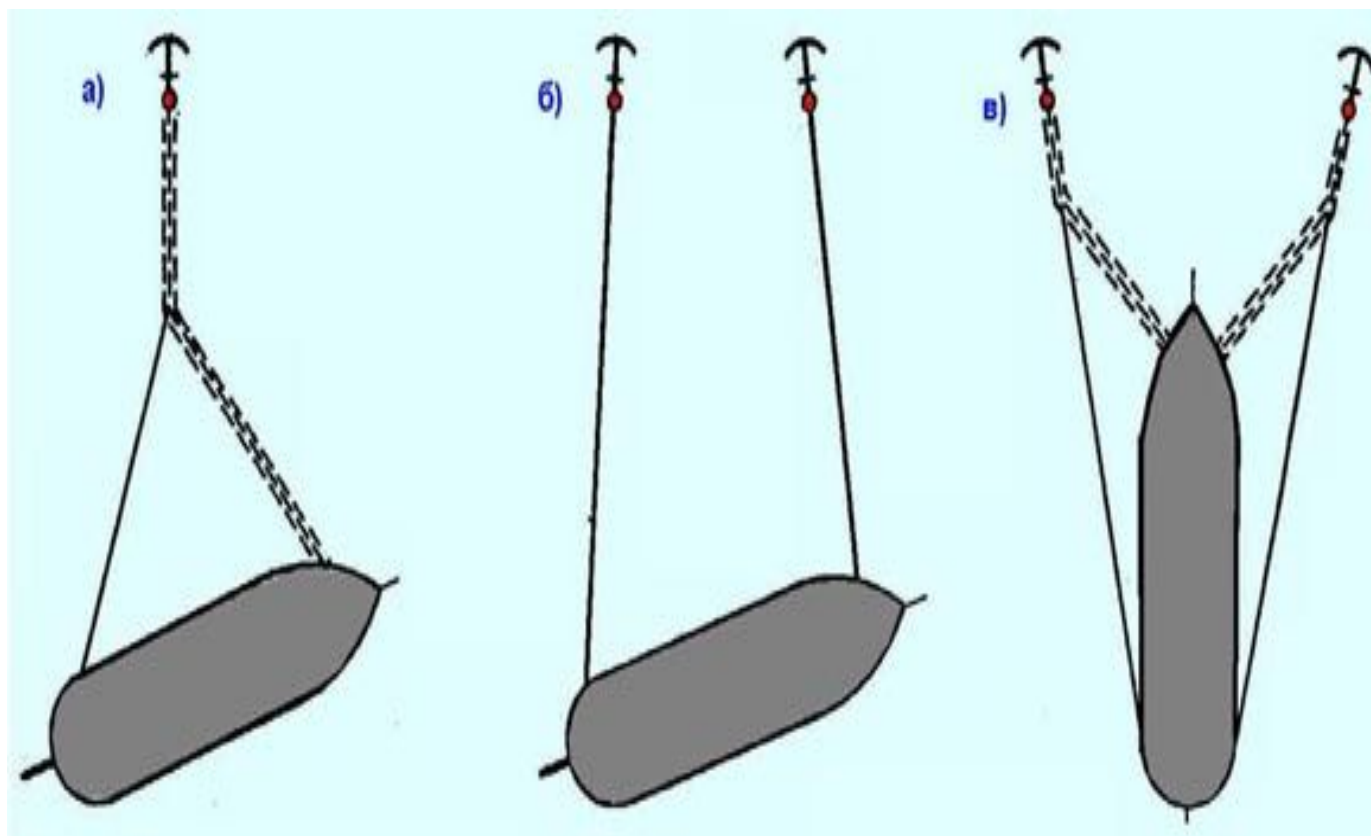
Nostāšanās uz 2 enkuriem, lai
samazinātu svaidīšanos



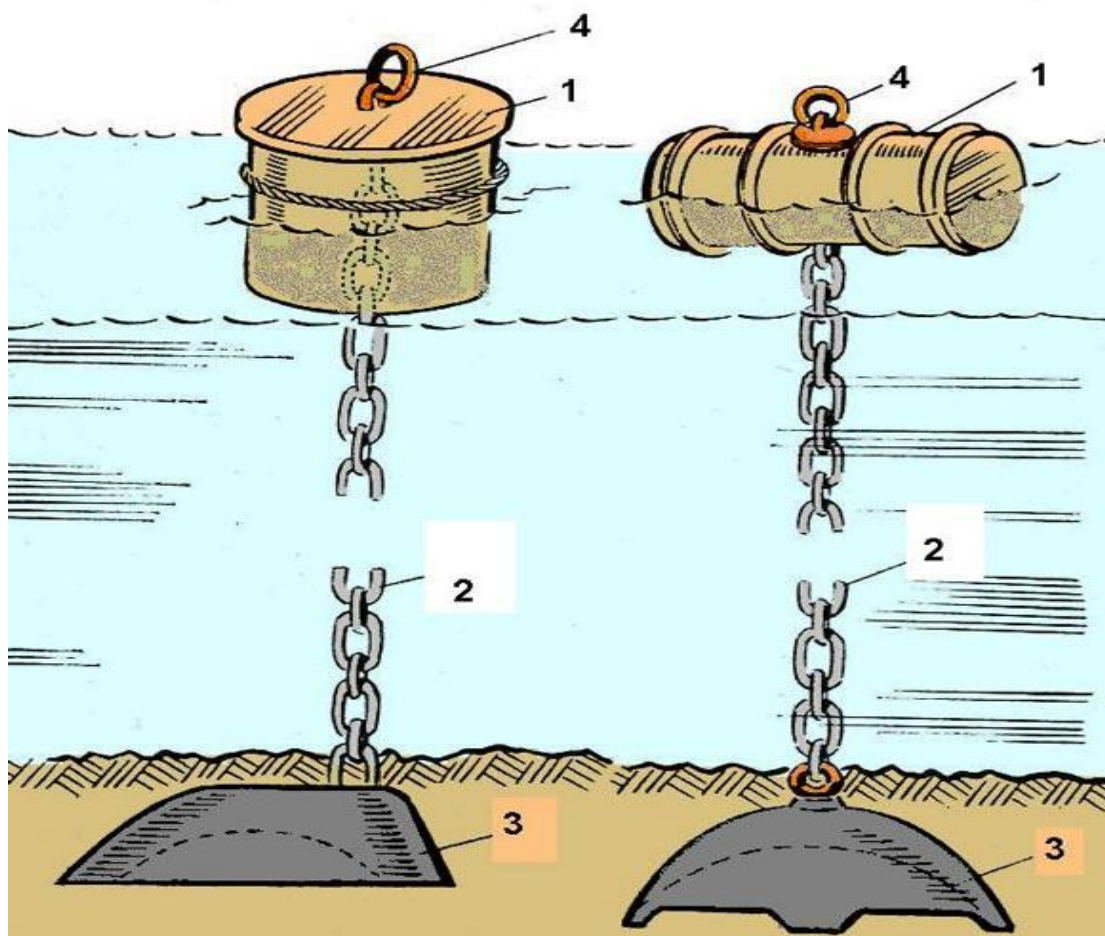
Fertoinga paņēmiens



Kuĝa noliĝšana uz ŝpringa

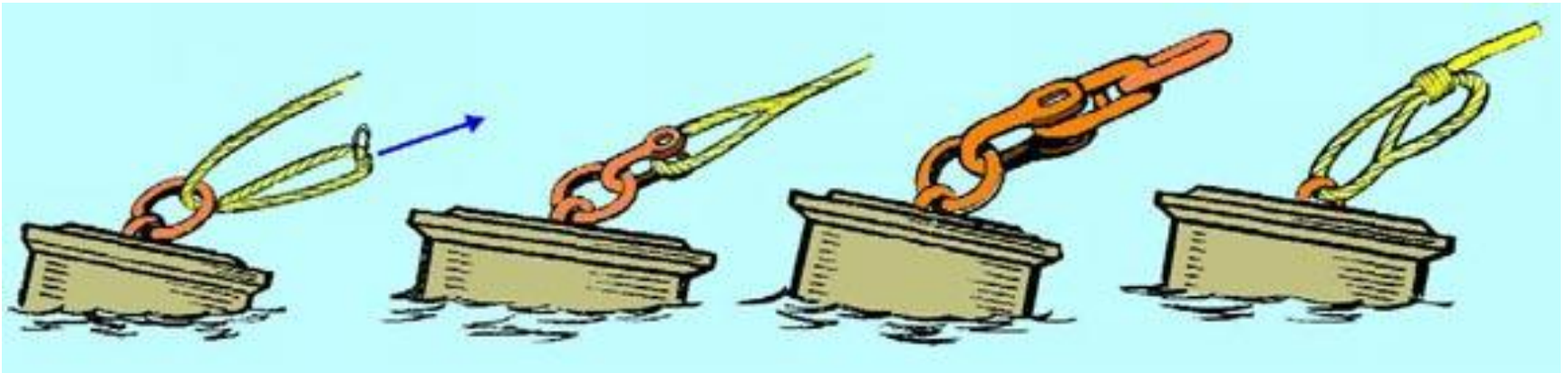


Kuģa nolikšana uz mucām un bridelēm



1. Vertikālā un horizontālā cilindriskā muca
2. Kēdes bridele
3. Mirušais enkurs
4. Brideles gredzens

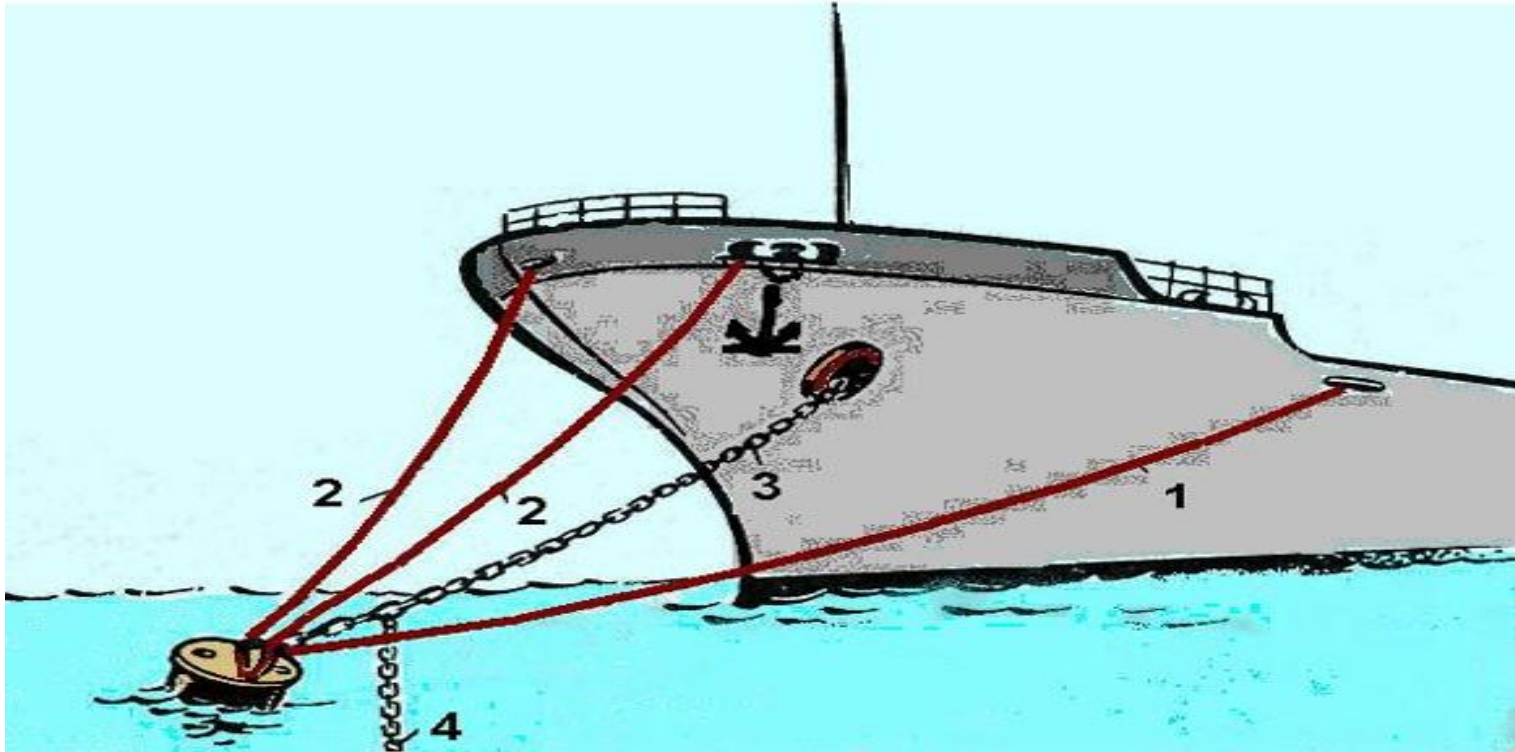
Trošu un ķēžu stiprināšanas shēmas pie mucām



- Duplīne
- Takelāžas šēkeli
- Pusduplīni



Enkurķēdes stiprināšana pie mucas gredzena



1. Tauvošanās gals; 2. Duplīnes tauva uz abiem bortiem; 3. Enkurķēde; 4. Augu pietauvošanās gals

Kuģa drošības nodrošināšana stāvēt uz enkura

Stāvēt uz enkura aizliegts:

- veikt darbus mašīntelpā
- galvenajam dzinējam jābūt gatavībā

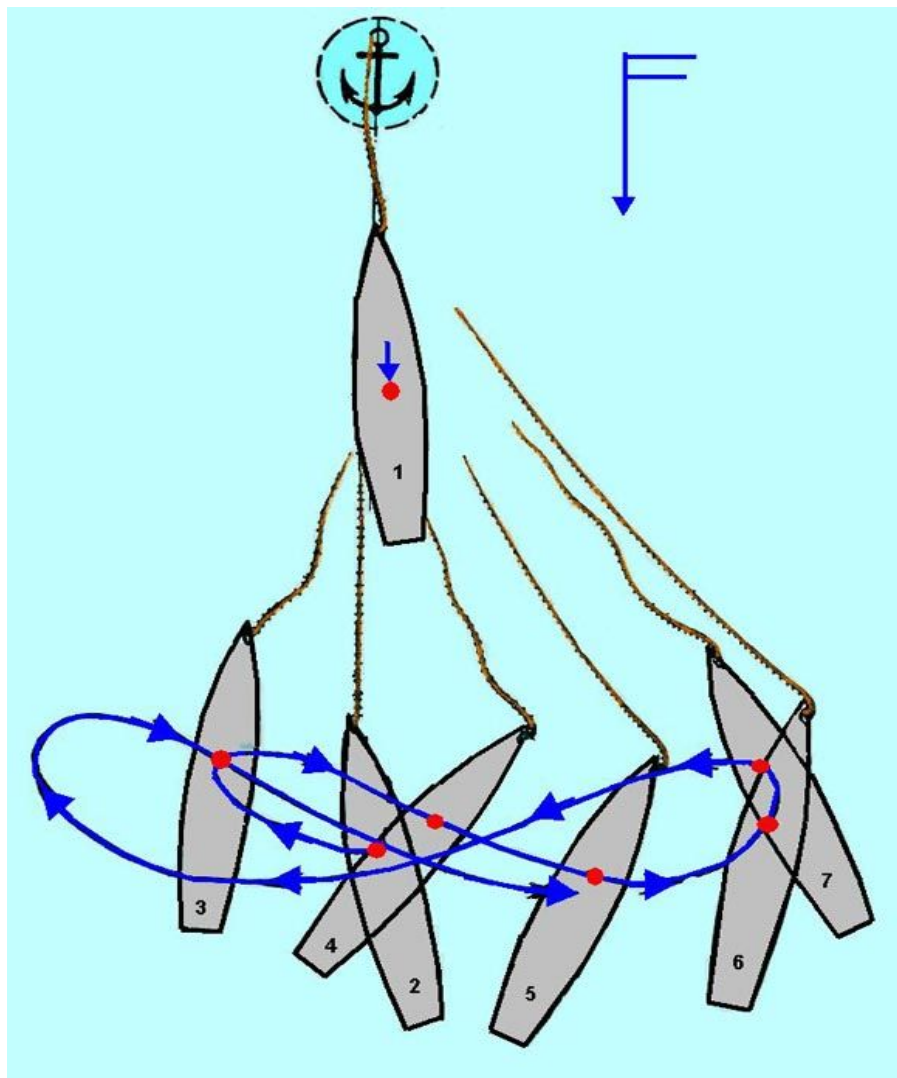
Sardzei uz tiltiņa jāveic:

- novērojumi par laikapstākļiem
- apkārtnes novērošana
- savlaicīgi jāpamana kuģa dreifēšana

Ja rodas dreifs, nepieciešams:

- pielaist ķēdi
- pie vēja palielināšanās ķēde tiek pielaista pilnībā
- ja viens netur, jānoliekas uz otra

Kuģa uzvedība pie vieglas brīzes



Lai samazinātu svaidīšanos, nepieciešams:

- papildus pielaist ķēdi
- uzņemt balastu
- atdot otru enkuru
- noņemties no enkura

Visas šīs darbības ir efektīvas, ja tās tiek pieņemtas savlaicīgi.