

Appendix A: Supplementary data

Table A Features with descriptives.

Type	Feature	Value/definition	Corresponding values
Accident	Accident type	collision, stranding/grounding, fire/explosion, contact, capsized/sinking, hull/machinery damage, other	1,2,3,4,5,6,7
	Month	January, February, March, April, May, June, July, August, September, October, November, December	1,2,3,4,5,6,7,8,9,10,11,12
	Time	0000-0400, 0400-0800, 0800-1200, 1200-1600, 1600-2000, 2000-2400	1,2,3,4,5,6
Human	Physical & Psychological state	poor, good	1,2
	Education background	poor, good	1,2
	Time at sea	<5 years, 5 ≤ time <10 years, ≥ 10 years	1,2,3
	Time in present rank	<1 year, 1 ≤ time <5 years, ≥ 5 years	1,2,3
	Communication problem	yes, no	1,2
	Operational error	yes, no, unknown	1,2,3
	Violation operation	yes, no, unknown	1,2,3
Ship	Age	0-10 years, 10-20 years, 20-30 years, ≥ 30 years	1,2,3,4
	Ship type	Bulk carrier, Container ship, Oil tanker, Passenger ship (including cruise and ro-ro passenger ship), Chemical tanker, General cargo ship, Fishing vessel, Yacht and sailing vessel, Tug and port traffic boat, Others	1,2,3,4,5,6,7,8,9,10
	Gross tonnage	<500 t, 500-3000 t, ≥ 3000t	1,2,3
	Engine power	<750 KW, 750-3000 KW, ≥ 3000 KW	1,2,3
	Flag state	Flag of convenience, Not flag of convenience	1,2
	Ship's certificates	complete and valid, incomplete or invalid	1,2
	Ship manning	adequate, inadequate	1,2
	Seafarers' certificates	complete and valid, incomplete or invalid	1,2
	Seaworthiness	yes, no	1,2
	PSC/FSC inspection	unsure, sure	1,2
Environment	Location	Inland waters, Port, Coastal waters, Open Sea	1,2,3,4
	Visibility	very poor - Vis <0.5 nm, Poor - 0.5 ≤ Vis <2 nm, Moderate - 2 ≤ Vis <5 nm, Good and very good - Vis ≥ 5 nm	1,2,3,4
	Wind force	0-5, 6-7, 8-9, 10-12	1,2,3,4
	Sea state	0-3, 4-5, 6-7, 8-9	1,2,3,4
	Current speed	<2kn, 2-4kn, ≥4kn	1,2,3
	Traffic density	low, high	1,2
	Fairway width/ship length	w/l < 1, 1 ≤ w/l < 2, w/l ≥ 2	1,2,3
	Depth-draft ratio (h/ d)	h/d < 1.2, 1.2 ≤ h/d < 1.5, 1.5 ≤ h/d < 3, h/d ≥ 3	1,2,3,4
Management	Regulation	inadequate, adequate	1,2
	Supervision	inadequate, adequate	1,2
	Violation in supervision	yes, no	1,2
	Safety management system	defective, non-defective	1,2
	Safety management	inadequate, adequate	1,2
	Rectification of problems	unresponsive, responsive	1,2
	Company safety culture	poor, good	1,2
	Training	inadequate, adequate	1,2
	Drill	off schedule, stick to the schedule	1,2

Note: The unit of wind rating is "Beaufort scale".