

Scenario 001

Crossing Situation

Collision Avoidance & Bridge Resource Management

A condensed demonstration of FIWI Maritime's instructor-ready scenario structure for professional bridge simulation training.

SAMPLE EXTRACT - For training-content evaluation only. Not an operational navigation procedure.

Developed in Norway

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Purpose & learning objectives

The exercise assesses whether the bridge team can recognise a developing crossing situation early, determine collision risk using multiple sources, identify own vessel's responsibilities and take effective action while maintaining awareness of secondary traffic.

Parameter	Setting
Training level	Officer / advanced officer
Environment	Open water, daylight, good visibility
Primary focus	Collision avoidance, COLREG application, BRM
Simulator time	25-35 minutes
Debrief	20-30 minutes
Platform	Platform-agnostic scenario specification

Learning objectives

- Maintain an effective visual, radar and navigational lookout.
- Identify a developing risk of collision before a close-quarters situation develops.
- Use bearing trend, range, CPA/TCPA and visual information as part of a systematic assessment.
- Correctly identify own vessel as the give-way vessel in the primary crossing situation.
- Develop an avoidance strategy that considers the full traffic picture.
- Take early, positive and substantial action and monitor the result until vessels are past and clear.
- Demonstrate clear bridge-team communication and appropriate escalation.

Regulatory references: COLREG Rules 5, 7, 8, 15, 16 and 17.

Traffic setup

The geometry is deliberately simple enough to isolate decision-making, while a secondary vessel prevents a purely memorised response.

Own ship - OS-01

Parameter	Value
Type	General cargo / multipurpose vessel
LOA	195 m
Heading / COG	000° / 000°
Speed	14.0 kn
Position	X 0.00 NM / Y 0.00 NM
Equipment	Radar, ARPA, AIS and ECDIS operational

Primary target - TV-01

Parameter	Value
Type	Bulk carrier, power-driven
Course / speed	270° / 12.0 kn
Position	X +4.83 NM / Y +5.63 NM
Initial bearing / range	~041° starboard / ~7.4 NM
Initial CPA / TCPA	~0.0 NM / ~24 min

Secondary target - TV-02

Parameter	Value
Type	Small coastal cargo vessel
Course / speed	150° / 10.0 kn
Position	X +0.87 NM / Y +4.92 NM
Initial bearing / range	~010° starboard / ~5.0 NM
Initial CPA / TCPA	~1.9 NM / ~12 min

Scenario development

Phase A - Detection

TV-01 remains approximately steady on the starboard bow while range decreases. No instructor warning is given. The trainee is expected to acquire and interpret the traffic picture independently.

Desired behaviour: identify TV-01, establish risk of collision, recognise the crossing relationship and determine own vessel's give-way responsibility.

Phase B - Decision

TV-02 becomes increasingly relevant to any proposed starboard alteration. The trainee must select a safe strategy based on the entire traffic picture. There is deliberately no single pre-programmed “correct manoeuvre”.

Instructor branches

Branch	Instructor response
A - Early competent action	Targets maintain course and speed. Continue to monitoring and debrief.
B - Hesitation	Allow the margin to deteriorate. Penalise delayed decision-making even if a later manoeuvre prevents collision.
C - Repeated small alterations	Maintain the primary target geometry so that ambiguous incremental action does not resolve the risk.
D - Large starboard alteration	Secondary traffic becomes a developing close-quarters problem if the trainee fails to assess TV-02.
E - Attempt to cross ahead	Allow passing distance to remain uncomfortable unless further corrective action is taken.

Performance framework

Each category can be graded 1-5. The purpose is to assess practical judgement and bridge-team performance, not simply rule recall.

Category	High-performance indicator
Situational awareness	Identifies both relevant vessels early and continuously updates the traffic picture.
COLREG application	Correctly identifies the vessel relationship and applies the relevant rules in a practical solution.
Decision-making	Selects an early, clear and well-reasoned manoeuvre based on the complete traffic picture.
Traffic management	Evaluates consequences for all relevant targets before acting.
Monitoring	Verifies bearing trend, CPA/passing geometry and effectiveness until traffic is past and clear.
Bridge resource management	Communicates clearly, allocates tasks, encourages challenge and escalates appropriately.

Critical fail examples

- Failure to recognise an obvious collision risk.
- Incorrectly treating OS-01 as the stand-on vessel.
- No meaningful avoiding action before instructor intervention is required.
- Creating a second severe close-quarters situation through inadequate traffic assessment.
- Failure to monitor the effectiveness of the manoeuvre.

Instructor debrief guide

Situation recognition

- When did you first consider TV-01 a collision risk?
- What information led you to that conclusion?

COLREG

- Which rules did you consider applicable?
- Which vessel was required to keep out of the way, and why?

Manoeuvre

- Why did you select your chosen action?
- How did TV-02 influence the manoeuvre?
- What alternatives did you consider?

Timing

- Could action have been taken earlier?
- What advantage would earlier action have provided?

Monitoring

- How did you confirm the manoeuvre was working?
- When did you consider the target finally past and clear?

BRM

- What information should have been shared within the bridge team?
- When would you call the Master?

FIWI Maritime can develop this structure around a centre's own learning objectives, trainee level, vessel context and simulator environment.

Disclaimer: This sample is designed for instructor-led simulation and training-content evaluation. It is not an operational navigation procedure or a substitute for the COLREG, company procedures, standing orders or professional judgement.