

DETAILED TEACHING SYLLABUS

Stability for Fishing Vessels

LEARNING/PERFORMANCE OBJECTIVES	IMO REFER ENCE	REFERENCE TEXTS	TEACHING AID
Stability for Fishing Vessels			
I. Instructor/student introductions A. Students/instructor introduce themselves, discuss relevant maritime experience, Instructor gains knowledge of student experiences and working conditions B. Student understands course completion expectations and certification			
II. Four Stability regulations A. F/V's registered > 79 feet built after 1991 (if not load lined) OR B. Substantially altered (wt. changed more than 2% – 3%) C. Future requirements: Written stability "guidance" F/Vs 50-79 feet? AND? D. D. Stability training		USCG regulations booklet	
III. Stability terminology- 15 terms A. Center Gravity (CG) B. Center Buoyancy (CB) C. Metacenter D. GM E. Righting arm/moment F. Lightship G. Deadweight H. Initial Stability I. Stability differences 1. Initial stability- at rest, no external forces. 2. Overall stability- in working environment at sea. J. Damage Stability K. Watertight Integrity- the main hazard of improper watertight integrity – 1. Below waterline- lack of hull integrity and/or watertight bulkheads. 2. Above waterline- open doors, hatches, poor seals. L. Incline test- Meets USCG standards for stability. M. Displacement N. Reserve Buoyancy O. Free surface effect		USCG or Canadian CG stability Booklet.	Use of interactive stability rocker or model and/or FV stability video, slides
IV. Factors affecting stability -best practices- 11 factors A. Load height/excessive trim B. Free surface effect		USCG or Canadian CG stability Booklet	FV stability video, slides

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<ul style="list-style-type: none"> 1. Avoid slack tanks 2. Use narrow tanks, baffles C. Overloading <ul style="list-style-type: none"> 1. Keeps CG high 2. Lowers freeboard D. Shifting loads <ul style="list-style-type: none"> 1. CG will move to low side 2. Secure gear/fish <u>before</u> rough seas E. Lifting Loads – raises CG <ul style="list-style-type: none"> 1. CG swifts outboard 2. Minimize lifting time 3. Suspend lifting rough seas 4. Get fish below quickly 5. Ensure fittings in good condition F. Icing- raises CG <ul style="list-style-type: none"> 1. Remove ice 2. Change heading 3. Establish comms- survival gear ready 4. Good trip planning G. Weight Changes/Creep <ul style="list-style-type: none"> 1. Consult naval architect for major changes 2. Reassess stability every 5 years H. Flooding- Progressive, unintentional- principles & practices <ul style="list-style-type: none"> 1. Maintenance 2. Keep watertight openings close 3. Raised coamings protect vs downflooding with water on deck. 4. High water alarms I. Hang-ups <ul style="list-style-type: none"> 1. Use break away gear 2. Have bolt cutters, releases handy J. Heavy seas- helmsmen procedures <ul style="list-style-type: none"> 1. Slow down 2. Take best angle to waves- avoid seas on quarter 3. Secure load and watertight integrity 4. Avoid sudden turns K. Turning & Towing risks <ul style="list-style-type: none"> 1. Center gravity raised to tow point 2. Stern freeboard lowered 3. Heeling force increasing from turning L. Use interactive models and hands on activities to demonstrate at least 3 ways to increase stability. M. Stability casualty case studies (NTSB/USCG) <ul style="list-style-type: none"> 1. FV Katmai 2. FV Uyak II 			

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<p>in holds and tanks & easy to understand</p> <ul style="list-style-type: none">- Stability curve- Gives righting force at angles of heel- Identifies angle of flooding <p>VIII. Stability risk factors for fisheries of participants in training</p> <p>1.</p>		NIOSH statistics & Student experience	