CHAPTER 20 - FISHING MASTER, THIRD-CLASS

PART I - GENERAL REQUIREMENTS OF APPLICANTS

20.1 Every applicant for a certificate as Fishing Master, Third-Class, shall:

(a) have acquired 24 months of service, or 12 months of service while holding a fishing master, fourth-class certificate, on a ship of not less than 25 tons engaged on voyages beyond the limits of partially smooth waters.

(b) obtain a medical certificate prescribed by the Crewing Regulations;

(c) obtain a Restricted Operator Certificate with Maritime Commercial Qualifications (ROC-MC) issued by Industry Canada;

(d) obtain a certificate of completion for the Basic Safety (A1) of the Marine Emergency Duties Course, set out in TP 4957, from a school listed in TP 10655;

(e) obtain a Marine First Aid Advance Certificate, set out in TP 13008;

(f) pass an examination in each of the following subjects:

(i) Communications;
(ii) Navigation Instruments;
(iii) Chartwork and Pilotage;
(iv) Navigation Safety; and
(v) General Ship Knowledge including Engineering knowledge;
(vi) Meteorology
(vii) Ship Stability

(h) pass an oral examination in General Seamanship.

PART II - EXAMINATIONS

20.2 The following table lists the examinations for the Fishing Master, Third-Class, Certificate, the qualifying sea service required before each may be attempted, and other requirements:

Examination	Qualifying Service	Other Requirements
011 Communications	Nil	Nil
020 Navigating Instruments	9 months	Nil
041 Chartwork and Pilotage	18 months	Nil
061 Navigation Safety	12 months	Nil
073 Meteorology	9 months	Nil
111 Ship Stability	9 months	Nil
157 General Ship Knowledge including Eng Knowledge	12 months	Nil
167 General Seamanship	24 months	All other examinations and MED A1 must have been passed before attempting 167.

PART III - VALIDITY OF CERTIFICATE

20.3 The certificate as Fishing Master, Third-Class, is valid for:

(a) second mate of a fishing vessel without restriction;

(b) first mate of a fishing vessel within the intermediate voyage limits; and

(c) master of a fishing vessel within local voyage limits.

20.4 A Fishing Mate Certificate may be exchanged for a Fishing Master, Third-Class, by passing examinations 011 and 061 and an oral examination on the command aspects of paper 167. This refers to the Fishing Mate Certificate obtained under the regulations that came into effect in September of 1976. Certificates issued prior to September 1976 cannot be exchanged.

PART IV - SYLLABUSES OF EXAMINATIONS

20.5 Communications

Examination number 011

Companion to Section 19.5

ITEM	COLUMN
1.	Visual Signals Recognition of international flags; knowledge of single letter signals under the International Code.
2.	Code Use of International Code of Signals in coding and decoding messages and in flag, Morse and voice procedures.
3.	Radio Use of *Radio Aids to Marine Navigation* for ascertaining facilities and services.

Note: The examination is multiple-choice.
Duration as necessary.

20.6 Navigation Instruments

Examination number 020

Companion to Sections 15.16, 16.14 and 21.5

ITEM	COLUMN
1.	Radar Use of all radar operator controls; correct setting up and shutting down of equipment; performance check and recognition of malfunctions; recognition and correction of maladjustments of controls; periodic operator checks and determination of heading marker, bearing marker, range ring and range-marker error; obtaining ranges and bearings from equipment using proper reporting procedures and recognition of targets of all types; recognition of meteorological phenomena and false, multiple, and second-trace echoes, side lobes and interference; knowledge of the limitations of radar sufficient to ensure safe navigation; correcting range and bearing data for known errors; use of radar data (i.e. position fixing, following a track, matching radar image to chart, radar plotting restricted to ability to determine CPA and time); use of reflection plotter, radar horizon and extreme range charts and tables, operator's manual and radar logbook.

2.	Decca Use of all Decca operator controls; correct setting up and shutting down of equipment; performance check and recognition of malfunctions; periodic operator checks and determination of errors in the fraction, lane, and zone indicators, and in the LI lamp sequence meter; obtaining readings from equipment; limitations of Decca sufficient to ensure safe navigation; correcting readings for fixed and variable errors; use of Decca data for position fixing, use of Decca over-printed charts, and minimizing effect of variable errors; use of Decca data sheets and operator's manual.
3.	Loran Use of all Loran operator controls; correct setting up and shutting down of equipment; performance check and recognition of malfunctions; recognition and correction of maladjustment of controls; periodic operator checks and knowledge of compensation for measurement and instrument errors; obtaining readings from equipment; recognition of unwanted data, blinking and sky-waves; limitations of Loran, sufficient to ensure safe navigation; use of Loran data for position-fixing, use of Loran over-printed charts, and minimizing effect of variable errors; use of operator's manual.
4.	Echo-Sounding Machine Use of echo-sounder controls and interpretation of display.

Note: The examination is a practical test.
Duration as necessary.

20.7 Chartwork and Pilotage
Examination number 041
Companion to Sections 13.10, 16.18 and 19.7

ITEM	COLUMN
1.	Pilotage Preparations for pilotage; using available charts and publications, possession and ready for immediate use all necessary charts, including large-scale charts of the pilotage area duly corrected to date, latest sailing directions, *Notices to Mariners*, Light Lists, Traffic Zone Regulations (as applicable), tide tables, copy of Charts and Publications Regulations, Code of Navigation Procedures and Practices, and *Radio Aids to Marine Navigation.*
2.	Steering Common steering procedures, their purpose and how to put them into effect; the importance of establishing and adhering to internationally-accepted procedures in issuing helm and steering orders and having them acknowledged and complied with; the instruction of helmsmen in this matter.
3.	Symbols Chart symbols and abbreviations as published in *Canadian Hydrographic Service (CHS) Chart No. 1*.
4.	Sailing Directions Contents of preface to *Sailing Directions*, the important general navigational information contained in the preamble and opening chapter of these volumes.
5.	Lists of Lights Light characteristics, colours and sound signals used as aids to navigation; use of Lists of Lights, Buoys and Fog Signals; the terms used to define the power of lights (e.g., geographical range, luminous range, charted range, computed range, nominal range, computed visibility; use of a luminous range diagram); the effect of abnormal refraction fog signals of different types, anomalies of sound propagation in fog, notices regarding lights, lighthouses and buoys etc. published in *Notices to Mariners*.
6.	Tidal Currents Find the set and rate of tidal current that may be expected at a given point from information given in tide and current table or on the chart; ability to use tables and information on the chart of the locality with awareness of the possibly significant effect of weather on the reliability of the information so obtained.

7.	Navigation in Confined Waters Navigation in confined waters: altering course; transits; leading marks and bearings; recording the vessel's progress; making allowance for height of tide; the preparatory details to be attended to upon entering confined waters (e.g., a review of the relevant sections of the sailing directions, ready availability of large-scale charts of the area with proposed track drawn indicating distances, courses and near dangers noted); navigational aids with their characteristics to be identified, clearing lines, marks and bearings to be used during the passage to be drawn in, precalculation of tidal heights where critical depths of water may be encountered; the maintenance of a record of the vessel's progress on both charts in logbook, including times of passing successive points, course's compass error, speed, weather; fixing the vessel's position by relative and true bearings, transits; dead reckoning position, estimated position and observed position.
8.	Navigation Aids Navigational aids in pilotage situations; the necessity of continuing the customary checks and counts of the vessel's safe progress by the officer of the watch (OOW) and ship's personnel, with record of the details of duties performed, notwithstanding that the vessel was under the conduct of a pilot; the duty of the OOW to ensure that the pilot's advice is understood and effectively carried out; the extent to which reliance is placed on buoys.
9.	Canadian System Canadian System of Buoyage in detail; differences between lateral and cardinal systems; use of *Sailing Directions* for determining other buoyage systems in use; current and new Canadian buoyage system with an understanding of the basic principles employed in the lateral and cardinal buoyage systems, the importance of consulting the applicable volume of *Sailing Directions* for details of buoyage system in force locally prior to entering unfamiliar waters of other countries; *Aids to Navigation*.
10.	Bridge Practices Bridge practices and procedures in pilotage situations charts, various projections in common use; the requirement to continue the practice of good navigational procedures by the OOW and ship's personnel in general, and the realization that the presence of a pilot on the bridge does not absolve the ship's personnel from their continuing responsibility for the safe navigation of the ship; the principle employed in construction charts on the Mercator, polyconic, and gnomonic projections, the limitations associated with each of these projections and the purposes of each in practical navigation.
11.	Charts Significant distortion, numbering and the presentation of information; the cause of chart distortion, need for nautical charts on board ship; the replacement of superseded editions; the mode of presentation of information on charts; metrication; chart catalogues and numbering.
12.	Chart Usage Use charts produced by the major projections in common use by the Canadian Hydrographic Service, including gnomonic charts; the use of charts in the practice of coastal navigation and on ocean passages; the plotting of bearings, position lines clearing lines etc.; the transfer of positions from a chart of one projection to another of a different projection; the use of a gnomonic projection chart, Mercator and polyconic charts.
13.	Fixing Position Fixing the ship's position by means at the disposal of the OOW, including electronic navigational aids; considerations to be taken into account, including errors and limitations of equipment; the correction and plotting of bearings taken visually, by radar or direction finder (DF) and the limitations of accuracy inherent in each of these methods; the ship's position established by bearings or ranges taken simultaneously or with an interval and run intervening.
14.	Estimating Position Estimating the vessel's position, including allowing for effects of wind and/or tide; the reliability of the value in direction and force of wind, current and tidal effect used in arriving at the ship's DR position and the resulting area of doubt.
15.	Laying Off Courses Laying off courses, including allowance for effects of wind and tide; the problem of combining vectors of wind, current, tidal effect and course to steer to arrive at course made good, scrutiny of chart for off-lying dangers.

16.	Conversion of Course Conversion of true courses laid off to magnetic courses, including determination of variation at any place; conversion of true courses to gyro, magnetic and compass courses and vice versa; determining the up-to-date value of variation and interpolating for variation at a given locality from isogonic lines or compass roses; use of transit lines, azimuth and amplitude to determine compass error.
17.	Distance Measurement Distance measurement and the determination of speed made good and speed through the water; the measurement of distance on a Mercator or polyconic chart; the factors contributing to speed made good and speed through the water, how the difference between the two is expressed.
18.	Range of Visibility Factors controlling the range of visibility; terms associated with visibility of lights on navigational aids.
19.	Reliability of Charts Reliability of charts; indications by which reliability may be judged (e.g., date of original survey and possibility of subsequent surveys, adequacy of recorded soundings, with corrections having been made to date; large-scale charts show a small area in greater detail than small-scale charts; care and upkeep of charts.
20.	Publications Use of publications at the disposal of the coastal navigator, including *Notices to Mariners* for the correction of charts and publications; the various publications available to the navigator and the nature of their contents; the importance of chart corrections being kept up-to-date.
21.	Tidal Terms Meaning of tidal terms in common use in CHC and United States tide tables; general understanding of tidal phenomena necessary for the comprehension of tidal terms; tidal atlases.
22.	Calculation of Tides Calculation of tides and heights of high and low water at reference and secondary ports and the calculation of depth of water at those times; use of the calculated depth of water at high and low water to determine the height of water at a given charted position.
23.	Set and Rate of Tides Estimation of set and rate of tidal currents by reference to tidal current tables and by actual observation; the tentative nature of tabulated tidal current values and the need for caution in using them; the care required in making tidal current observations and the associated details that must be recorded.
24.	Records Need for keeping an accurate record of the vessel's progress and the keeping of such a record; the duty of the OOW to maintain an accurate, detailed and continuous record of the vessel's progress from which a position may be readily determined at any time; the value of such a record being available as a measure of safe navigation and in the event of an emergency requiring immediate knowledge of the ship's position.

Note: The examination consists of:
(a) a practical chartwork paper, and
(b) a multiple-choice examination.
Duration is three hours.

20.8 Navigation Safety

Examination number 061

Companion to Sections 13.12, 16.19, 18.7, 19.8 and 21.7

ITEM	COLUMN
1.	General Knowledge Knowledge and application of the content of the Collision Regulations with Canadian Modifications 1983; STCW Code section A-VIII/2.

Note: The examination is a multiple-choice test.
The examination may be oral at the applicant's option.
Duration as necessary.

20.9 General Ship Knowledge

Examination number 157

Companion to Section 19.11

ITEM	COLUMN
1.	Safety Need for accident prevention and precautions to be taken for fishing operations, those aspects not covered by applicable MED; ability to use the *Code of Safety for Fishermen*, a Transport Canada booklet; knowledge of the Safe Working Practice Regulations as applied to fishing vessels; knowledge of: Oil Pollution Prevention Regulations, Garbage Pollution Prevention Regulations.
2.	Parts of Ship Names, sections and contribution to overall strength of the principle members of wooden vessels comprising: keel, keelson, frames, stringers, planking, stern construction; functions of the principle parts and members of steel ships comprising: framing, plating, decks, bulkheads, hatchways, bilges, double bottoms, sounding and air pipes, propellers, and rudders.
3.	Superintend Minor repair work; dry-docking and slipping inspections; emergency repairs to maintain watertight integrity; basic knowledge of general pumping arrangements.
4.	Documents Understanding of ships' plans and specifications up to ships of 150 gross tons; determination of approximate metacentric height from the rolling period, using the monogram supplied in the IMO booklet *Recommendation on Intact Stability of Fishing Vessels*; ability to use and interpret stability and trim data supplied to fishing vessels up to 150 gross tons.
5.	Construction Names of principal parts of fishing vessels; knowledge of the construction of different types of fishing vessels built of steel, wood, aluminium, fibreglass, and ferro-cement, including a knowledge of framing, shell plating, decks, bulkheads, hatchways, bilges, air pipes and freeing ports; meaning of the terms gross tonnage, net tonnage, deadweight and freeboard.
6.	Draft Reading draft and finding mean drafts, with and without list, and change of draft when going from salt to fresh water and vice versa; effect, in general terms and excluding calculation, of adding, removing and transferring weights on draft, list and trim and an appreciation of the meaning and characteristics of stiff and tender ships; meaning of terms displacement and deadweight; use of displacement scale to determine displacement from draft and vice versa.
7.	Stability Effects of reduction in freeboard on stability and seaworthiness, and the dangers of overloading; use of stability and trim information supplied to fishing vessels; knowledge of: law of flotation; centre of gravity; centre of buoyancy, its movement; metacentre and metacentric height, initial stability; stiff and tender ships; stable, neutral and unstable equilibrium; angle of loll, its causes and effects; practical appreciation of the dangers of free surfaces in tanks and when the fish load is carried in bulk; effect on stability of loading or discharging weight and lowering and raising weights; effect on stability of a suspended weight; dangers due to icing effects.
8.	Rigging Deck machinery, standing and running gear pertaining to fishing vessels; appreciation of power gained by purchases; measurements and strengths of synthetic and fibre ropes, wires and chain.

Note: Items 1 and 4 are open book.
The examination is a multiple-choice test.
Duration is two hours.

20.10 Meteorology

Examination number 073

Companion to Section 11.12, 14.6, 18.8 and 19.9

ITEM	COLUMN
1.	Chemical Composition of the Atmosphere Water vapour, nitrogen, oxygen, argon, carbon dioxide, krypton, xenon, ozone; dust and hygroscopic particles, dust, smoke, salt particles; micro-organisms (such as bacteria used as nuclei for artificial snow).
2.	Vertical Structure Troposphere, stratosphere, mesosphere, thermosphere and ionosphere; stratospheric clouds, nacreous and noctilucent, appearance, height limits, composition; optical phenomena, reflection, refraction, aureole, bishop's ring, corona, halo, mock sun or parhelion, rainbow, mirages, Saint Elmo's fire, northern lights, magnetic storms, phosphorescence.
3.	Transfer of Heat Radiation, conduction, convection, turbulence.
4.	Temperature Related to the atmosphere and the earth; calorie, specific heat of water and earth; perpendicular and oblique radiation; selective absorption of radiation by the atmosphere; isotherm; temperature and distance of the sun.
5.	Atmospheric Moisture and Changes of State Heat of fusion, vaporization and sublimation; latent heat; relative and absolute humidity, saturation, supersaturation and supercooling, dew point; lapse rates, adiabatic cooling, dry and saturated lapse rates.
6.	Atmospheric Stability Stability, instability, conditional instability, potential instability; causes of inversions, radiative cooling, turbulence or convection, subsidence; effects of inversions, fog and low-lying cloud, smog, accumulation of smoke, causes of subsidence, effect of substances, compression heating, evaporation.
7.	Fog Definition, formation; season, locality and frequency of occurrence; major types, advection, radiation, frontal, sea smoke; anomalous propagation of sound in fog, mist, haze, smog.
8.	Clouds Formation, convection, turbulence, frontal, convergence, orographic; types, stratus, cumulus, stratocumulus, nimbostratus, cumulonimbus, altostratus, altocumulus, cirrus, cirrostratus, cirrocumulus.
9.	Precipitation Theories explaining the formation of precipitation; relative sizes of condensation nuclei, cloud droplets, drizzle drops and rain drops; types, convectional, frontal, orographic; forms of precipitation, dew, frost, rain, snow, sleet, hail, snow pellets, snow grains, ice pellets, diamond dust, rime.
10.	Lightning Theory of formation; associated clouds, conditions within the clouds; times, seasons and localities of occurrence.
11.	Pressure and Pressure Systems Definition; Coriolis effect; convergence and divergence; highs and lows, standard atmosphere (1013.25 mbar); isobar, isallator, diurnal pressure variation, effect of diurnal pressure variation on detection of tropical revolving storms, isobaric patterns and pressure gradients, pressure gradient, terminology, deepening or filling low, weakening or filling high, shallow (weak) pressure gradients, steep (strong) pressure gradients; patterns, troughs, ridges, cols; types of depressions, polar front low, thermal depression, vertical instability depression (e.g. tropical revolving storm); straight isobars, effect of straight isobars on wind and weather.

12.	Winds Definition, speed (knots and Beaufort scale); direction, veering and backing, calculation of pressure gradient, geostrophic wind, gradient wind, centrifugal force, Buys Ballot's law, cyclostrophic wind, effect of latitude and friction on wind speed, effect of latitude on geostrophic wind scale, absence of surface friction above 2000 feet, angle of indraught (15° at sea, 30° over the land); special wind effects, land and sea breezes, anabatic and katabatic winds, Fohn effect (chinook), gusts and squalls; monsoons, theory of monsoon formation, land and sea breezes compared to monsoons, pressure and weather characteristics associated with, monsoons in the Indian Ocean and China Sea; global systems circulation, seasonal modification and permanent pressure systems; intertropical convergence zone, trade winds, horse latitudes, westerlies, roaring forties, polar front, semi-permanent highs (Atlantic and Pacific), polar highs, Icelandic and Aleutian lows, effects of land; local winds, locality, season and prevailing direction of following winds, levanter, vendevals, mistral, bora, sirocco, gregale, etessain, khamsin, simoon, shamal, kaus, elephants, brick fielder, williwaw, harmattan, norther, tehuantepecer; upper air circulation and jet stream, thermal wind, isohypses, Rossby waves, flow patterns at 500 mbar, steering rule.
13.	Air masses Definition; source regions; identification; characteristics; modification; seasonal movement (North America and offshore); types, continental arctic, continental polar, continental tropical, maritime arctic, maritime polar, maritime tropical, equatorial.
14.	Fronts Definition; types, stationary, cold, warm, occluded; movement; sequence of weather associated with fronts, pressure, wind, temperature, cloud, weather, visibility; squall lines, definition, association with cold fronts, weather experienced with squall lines, pressure, wind, temperature, cloud, weather, visibility; areas of occurrence; local names (e.g., pampero, southerly buster).
15.	Families of Depressions or Extra-Tropical Cyclones Formation between two air masses, life cycle and movement cross section, associated weather, frontogenesis, frontolysis, secondary depressions.
16.	Waves and Swells Difference between seas and swells, definitions of period, height, length, speed, steepness, fetch; wave groups, waves in shallow water, ground swell, breakers and surf; swells in forecasting tropical revolving storms; effects of coast, currents, tide; storm surge; effect of ice on waves, ice crystals, pack ice; tsunamis and tidal waves, description, epicentre, dangers, tsunami warning system, true tidal waves and tidal bores; seiche.
17.	Oceanic Currents and Effect on the Climate Definition of set and drift, wind-drift currents, gradient currents, complex currents (including stream currents), Coriolis effect and Ekman's spiral, upwelling, permanent currents, seasonal currents; general surface circulation and offshoots in North American waters, geographical limits, seasonal variations, direction, strength; effect of currents on climate, warm, cold; knowledge of the various currents of the world.
18.	Tropical Revolving Storms Definition of path, track, vertex or cod, vortex or eye, trough line, angle of indraught, dangerous semi-circle, dangerous quadrant, navigable semi-circle; features distinguishing it from extra-tropical cyclone, small diameter, steeper pressure gradient, winds tangent to central isobars, eye absence of fronts; warnings, radio messages, projected track, unusual swell, appearance of the sky, unusual changes in wind strength and direction, corrected drop in barometric pressure; weather associated with tropical revolving storms; sources of energy; seasonal distribution; practical rules for avoidance; hurricane and typhoon anchorages; mandatory reporting; names and season for tropical storms in the following areas: North Atlantic, western North Pacific, eastern North Pacific, South Pacific, Bay of Bengal, Arabian Sea, western Indian Ocean, eastern Indian Ocean.
19.	Ice Formation and Decay Freezing of fresh and salt water; formation of land ice; Greenland and Antarctic ice caps, glaciers; ice types and egg code; types of ice, new, frazil, grease, slush, shuga, nilas, pancake, young, grey, grey-white, first-year, second-year, multi-year, fast ice, pack ice, ice of land origin, forms of floating ice (floe sizes); ice fields and their movement, icebergs and drift, iceberg routes, limits, seasons, reasons for variation in numbers, difference between northern and southern hemisphere icebergs; presence of icebergs in North Pacific, North Atlantic lane routes, International Ice Patrol; icing of superstructures, causes, fog, freezing drizzle, freezing rain, freezing spray, serious accumulation above 04; avoidance, shelter, warmer water, alteration of course and speed; mandatory reporting, freezing temperatures, high winds.

20.	Ice Detection and Reporting Ice blink, absence of sea swell, problems associated with radar, limitations due to poor visibility, liaison with shore reporting stations; receipt of ice advisory broadcasts, ice advisory service, shipping support service, interpretation of ice charts; *Ice Navigation in Canadian Waters and Manice*, ice climatology and ice operations; instrumentation, thermometers, dry bulb, wet bulb, marine screen, psychrometer, sea-water temperature bucket; barometer, units, corrections, diurnal variations; barograph; wind measuring instruments; observations and weather reports, auxiliary ship, selected ship; climatology and forecasting, purpose, avoiding damage from storms, improving passage time, holding course in fine weather.
21.	Weather Messages and Codes Knowledge of services available through *Radio Aids to Marine Navigation, Atlantic, Great Lakes and Pacific*; ability to locate marine weather forecast areas; understanding weather forecasts for the Great Lakes, ability to use MAFOR code; assorted weather fax, weather, satellite, sea-state, and ice charts; synoptic charts, surface and upper air; recognition of isobaric distribution patterns; comparison with earlier charts; knowledge of information available on weather fax in Canada and worldwide; understanding of synoptic surface analysis charts; understanding of surface progs; understanding of wave charts, analysis, forecast; understanding of ice charts; ability to forecast the following for 12-24 hours, pressure, wind, sea state, visibility, clouds, weather changes.
22.	Optimum Weather Routing Advantages, reducing storm damage, saving time, meeting special requirements; methods on board ship, through shore-based firm, through government departments; climatological routing, in areas with stable weather patterns; optimum routing, geography does not dictate track, travel time is more than three days or 1500 miles; data and long-range progs are available.
23.	Requirements Application of ship's performance curves and sea data; use of surface analysis and prog charts; use of 500 mbar constant pressure charts for estimating storm track; use of ice charts, wave charts; practical drawing of optimum tracks embracing the use of polar stereographic or gnomonic charts, ship performance curves and locus positions; factors that require a continuous updating and revision of weather routing procedures.

Note: The examination consists of a written test comprising multiple-choice and descriptive questions.
Duration is three hours.

20.11 Stability
Examination number 111
Companion to Sections 14.9, 18.9 and 19.12

ITEM	COLUMN
1.	Ship's Draft Draft and freeboard, including effect of water density and fresh water allowance; use of displacement and ton per inch / tonne per centimetre (TPI/TPC) scales to determine displacement from draft and vice versa.
2.	Terms Meaning of displacement and deadweight; buoyancy, centre of buoyancy (B) and its movement, reserve buoyancy; centre of gravity (G), including the effect of adding, removing and transferring weights; righting lever (GZ) when the vessel is heeled, metacentre (M), metacentric height (GM) as an indication of initial stability, danger of slack tanks; centre of flotation (F) and trim, and existence of trimming moment created by G longitudinal (GL) and B longitudinal (BL); meaning and characteristics of stiff and tender ships.
3.	Stability Data Use of stability data supplied to fishing vessels, allowing for the effect of water density on draft and displacement; interpreting curves of statical stability, achieving satisfactory transverse stability, achieving desired trim; effect of adding, removing and transferring weights on draft, list and trim, allowing for the free surface effect of tanks or when the fish load is carried in bulk and change of stability during the voyage; effects of reduction in freeboard on stability and the dangers of overloading; dangers due to icing effects.

Note: The examination consists of multiple-choice questions and practical calculations based on ship's stability data booklet.
Duration is three hours.

20.12 General Seamanship
Examination number 167

ITEM	COLUMN
1.	Communications Recognition and knowledge of the meanings of the lifesaving and distress signals contained in the International Code of Signals.
2.	Safe Working Practical knowledge of safe working practices aboard fishing vessels; basic knowledge of pollution prevention; knowledge of Code of Safe Working Practices as it applies to fishing vessels.
3.	Watchkeeping Duties and responsibilities of watch members; action of the officer of the watch in emergencies at sea and in port; maintenance of a proper deck log concerning navigation progress, electronic instrument use and unusual occurrences; common steering procedures, their purpose and how to put them into effect; use of azimuth circle, pelorus or any selected method of taking a bearing; familiarity with changing over between automatic and hand steering, emergency steering (referring to operator's manual); reading bearings and headings.
4.	Responsibility Master's responsibilities in emergencies; duties and responsibilities of the master of a small vessel as required by the *Canada Shipping Act*; practical considerations of boat handling in heavy weather; master's duties on taking over and relinquishing command; preparation of the vessel for inspection and surveys.
5.	Weather Weather reports and their use; elementary knowledge of weather systems, high and low pressure areas and frontals.
6.	Rules Collision Regulations with Canadian Modifications 1983; Code of Nautical Procedures and Practices.

Note: The examination is an oral test.
Duration as necessary.