

CORE COMPETENCIES

UNIT OF COMPETENCY: OPERATE A VESSEL OF UP TO 3.0 GT

UNIT CODE : AGR642304

UNIT DESCRIPTOR: This unit covers the skills and knowledge required to prepare, operate, maintain, store and secure vessels of up to 3.0 Gross Tons within range of ready assistance and isolated from heavy boating traffic and navigational hazards. The operation is restricted to the basic use, maneuvering and loading of the vessel, but not the interaction of the vessel with boat traffic or other hazards.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Prepare the small vessel for use	<p>1.1 Planned work activities accord with enterprise policies and procedures.</p> <p>1.2 <i>Factors</i> that may compromise vessel safety are identified and addressed in the <i>work plan</i> and the operation of the vessel.</p> <p>1.3 All essential <i>safety equipment and spares</i> required for area of operation and intended work are checked for presence and serviceability.</p> <p>1.4 Vessel is loaded in accordance with manufacturer's specifications and enterprise procedures.</p> <p>1.5 Documentation is accomplished, per government regulations and policies</p>

<p>2. Operate and maintain a small vessel</p>	<p>2.1 Vessel stability is maintained within safety limits by establishing a low centre of gravity and securing and stowing loads.</p> <p>2.2 Vessel is operated at all times according to government requirements and enterprise procedures and in area of operation confined to limits of restricted area.</p> <p>2.3 Vessel is maneuvered safely using appropriate means to complete planned work tasks.</p>
<p>3. Store and secure a small vessel and equipment</p>	<p>3.1 Vessel is secured, maintained and stored after use according to enterprise procedures.</p> <p>3.2 Perishables and fuels are stored to minimise wastage, spoilage, environmental and fire hazards.</p> <p>3.3 Unserviceable equipment and spares are repaired or removed for repair or replacement according to enterprise procedures.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Factors	<ul style="list-style-type: none"> 1.1. sea condition: 1.2. wave height 1.3. chop 1.4. effect of current direction on wave height 1.5. visibility: 1.6. fog 1.7. smog 1.8. rain 1.9. low light conditions 1.10. operational limits 1.11. navigational hazards <ul style="list-style-type: none"> 1.11.1. fire. 1.11.2. Seaworthiness
2. Work plan:	<ul style="list-style-type: none"> 2.1. ability to make safe havens: <ul style="list-style-type: none"> 2.1.1. mother ship 2.1.2. shore 2.1.3. alternative sources of propulsion 2.2. ability to remove water from the vessel by: 2.3. bailing 2.4. hand or bilge pump 2.5. removing the drainage plug while in dry dock 2.6. ability to use alternative steering 2.7. ability to interpret weather forecasts 2.8. ability to initiate typhoon evasion

<p>3. Safety equipment and spares:</p>	<p>3.1. communications equipment</p> <p>3.2. bailing or bilge pumping arrangements</p> <p>3.3. fire extinguishers</p> <p>3.4. personal floatation devices</p> <p>3.5. alternative sources of propulsion and steering</p> <p>3.6. anchoring devices</p> <p>3.7. bilge removal systems</p> <p>3.8. distress signalling devices: including flares, flags, signalling mirrors, other methods</p> <p>3.9. water</p> <p>3.10. tools and spare parts</p> <p>3.11. torch and batteries.</p>
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4. Loads:	<ul style="list-style-type: none"> 4.1. distribution and securing procedures 4.2. passengers 4.3. catch 4.4. cargo: <ul style="list-style-type: none"> 4.4.1. fishing gear 4.4.2. diving equipment 4.4.3. oyster farm equipment 4.4.4. aquaculture nets and gear 4.4.5. stock feed 4.5. monitoring equipment.
5. Limits:	<ul style="list-style-type: none"> 5.1. distance from supervision 5.2. distance from safe haven 5.3. operational limits (Municipal or City waters) 5.4. speed limits 5.5. sectors 5.6. proximity to dangers 5.7. range of fuel tank
6. Maneuvered:	<ul style="list-style-type: none"> 6.1. using propulsion motor 6.2. using outboard motor 6.3. using oars 6.4. using sails 6.5. alternative steering.
7. Tasks:	<ul style="list-style-type: none"> 7.1. manoeuvring in confined areas or heavy seas 7.2. towing 7.3. approaching a beach or landing 7.4. recovering person overboard 7.5. Search and Rescue (SAR)
8. Maintained:	<ul style="list-style-type: none"> 8.1. by controlling: <ul style="list-style-type: none"> 8.1.1. corrosion 8.1.2. hull fractures and fatigue 8.1.3. hull damage 8.1.4. cleanliness.

9. Government requirements:	9.1. Relevant Philippine Government legislation, regulations and orders related to the maneuvering of vessels (including pertinent Marina regulations and related memoranda)
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EVIDENCE GUIDE

1. Critical aspects of competency	<p>Assessment requires evidences that the candidate :</p> <ol style="list-style-type: none"> 1.1. manoeuvred a small vessel while engaged in common tasks 1.2. ensured the vessel remains within operational limits. 1.3. Assessment must confirm knowledge of: <ol style="list-style-type: none"> 1.3.1. effect of overloading and poor stability practices 1.3.2. effect of sea state on vessel performance 1.3.3. pre-operational checks of propulsion system, dinghy and safety equipment.
2. Underpinning Knowledge and Attitudes	<ol style="list-style-type: none"> 2.1. Relevant Marina regulations and related memoranda 2.2. Vessel loading specifications and the location of this information 2.3. Rules of the Road and Collision Regulations (COLREG)
3. Underpinning Skills	<ol style="list-style-type: none"> 3.1. Manoeuvring small vessels using a range of propulsion techniques 3.2. Sea survival, fire fighting and first aid techniques. 3.3. Literacy skills used for: 3.4. reading manufacturer's operational and loading specification and the use by date of flares 3.5. reading manufacturer's period of validity of pyrotechnics.
4. Resource Implication	<p>The following resources must be provided:</p> <ol style="list-style-type: none"> 4.1. fully operational vessel powered by any propulsion motor.

5. Methods of Assessment	Competency should be assessed: 5.1. Through direct observation / demonstration 5.2. Portfolio
6. Context of Assessment	6.1. Assessment is to be conducted at the workplace or in a simulated work environment.

**UNIT OF COMPETENCY: MONITOR CONDITION AND SEAWORTHINESS
OF A VESSEL UP TO 3.0 GT**

UNIT CODE : AGR642305

UNIT DESCRIPTOR: This unit covers the skills and knowledge required to monitor the condition and seaworthiness of a vessel up to 3.0 GT, including an awareness of the fundamental principles of vessel construction and regulatory requirements for seaworthiness. It also includes the ability to identify indications of any deterioration in the hull.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Monitor the condition of the vessel	<ul style="list-style-type: none">1.1. Work to monitor condition and <i>seaworthiness of the vessel</i> is planned and carried out in accordance with government and company procedures and safety regulations1.2. Coverage and frequency of checks and inspections on the vessel complies with the standard procedures1.3. Checks of the integrity of the vessel's hull are correctly carried out including the use of a testing tank equipment where required1.4. <i>Action taken</i> in anticipation of environmental changes is timely and appropriate to the change1.5. Precautions are taken to ensure that vessel's powered equipment is operated in accordance with manufacturer's instructions and regulations
2. Rectify identified problems with the condition of the vessel	<ul style="list-style-type: none">2.1. Any deterioration of the vessel's hull or structure is examined and reported and recorded and appropriate action is initiated to fix the identified problem2.2. <i>Repairs</i> and corrosion control are initiated and coordinated in accordance with standard procedures and manufacturer's instructions

	<p>2.3. Communication with owners concerning the condition and seaworthiness of the vessel and related action is clear, concise and made at an appropriate time and place</p> <p>2.4. Records on problems identified and actions taken to carry out repairs and corrosion control and to ensure watertight integrity are complete, accurate and comply with requirements.</p>
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Seaworthiness of a vessel must be maintained:	<ul style="list-style-type: none"> 1.1. by day or night in both normal and emergency situations 1.2. under any possible conditions of sea, weather and loading 1.3. while underway 1.4. during berthing and unberthing operations 1.5. while anchoring or mooring 1.6. during dead on water (drifting) 1.7. at all times when the vessel is at operational status
2. Action taken to monitor the condition and seaworthiness of a vessel will depend on the limits of responsibility of the person concerned and may include:	<ul style="list-style-type: none"> 2.1. routine inspections 2.2. checks prior to departure 2.3. checks on completion of a voyage 2.4. checks on completion of maintenance activities 2.5. checks in anticipation of a change in sea and weather conditions 2.6. use of testing equipment to check watertight integrity 2.7. checks during an emergency which may have caused damage or changes to the seaworthiness of the vessel

<p>3. Repairs and maintenance procedures for a vessel will depend on the limits of responsibility of the person concerned and may include:</p>	<p>3.1. repairs to equipment, components, hull and vessel's structure</p> <p>3.2. surface preparation and painting (routine deck maintenance)</p> <p>3.3. underwater inspection to determine marine growth in the hull</p> <p>3.4. lubrication</p> <p>3.5. replacement of faulty equipment or components</p> <p>3.6. inspection/repair of main propulsion</p>
<p>4. Documentation:</p>	<p>4.1. procedures for monitoring of the condition and seaworthiness of vessel</p> <p>4.2. vessel and equipment manufacturer's instructions, specifications and recommended procedures</p> <p>4.3. maintenance schedules and records</p> <p>4.4. instructions of Philippine maritime authorities related to the seaworthiness of vessels</p> <p>4.5. vessel's license to operate</p>
<p>5. Government and international requirements:</p>	<p>5.1. Relevant Philippine Government legislation, regulations and orders and international requirements related to the monitoring of the seaworthiness of vessels</p>

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidences that the candidate:</p> <ul style="list-style-type: none"> 1.1. Monitored and evaluated the condition and seaworthiness of a small vessel under normal and emergency situations 1.2. Identified any deterioration of the vessel's hull, structure or equipment 1.3. Took appropriate preventative and remedial action to maintain the security and watertight integrity of the vessel's hull 1.4. Initiated and coordinated maintenance, repair or replacement of faulty or damaged equipment or vessel's structure in accordance with company procedures and manufacturer's instructions 1.5. Exercised all required safety, environmental and hazard control precautions and procedures during inspection and maintenance operations 1.6. Communicated effectively with others when taking action to maintain the seaworthiness of the vessel
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1. Relevant Marina regulations and related memoranda 2.2. Relevant OH&S legislation and policies 2.3. Procedures for the checking and inspecting a vessel's seaworthiness 2.4. The principle stresses which act on the structure of a vessel 2.5. Principles and procedures to ensure the watertight integrity of a vessel's hull in both normal and emergency situations

	<ul style="list-style-type: none"> 2.6. Damage control measures that may be required to maintain the integrity of the hull in a range of typical emergency situations that could occur on a small vessel 2.7. Procedures for the implementation of repair and maintenance program 2.8. Corrosion control measures including surface preparation and painting and antifouling 2.9. Safety, environmental and hazard control precautions and procedures relevant to inspection and maintenance operations 2.10. A basic understanding of the materials used in vessel construction 2.11. Construction, layout and subdivision requirements of various types of small vessels, including an understanding of freeboard and bulkhead deck, watertight compartments, watertight compartments and the bulkhead of the vessel 2.12. Records that must be maintained concerning the seaworthiness of a vessel 2.13. The safe working limits of rigging and gear and other working equipment
3. Underpinning Skills	<ul style="list-style-type: none"> 3.1. Conducting checks of seaworthiness of vessel 3.2. Taking relevant safety precautions 3.3. Literacy skills used for: 3.4. reading and interpreting regulations and vessel and equipment manufacturer's instructions 3.5. Communicating with crew members during checks of a vessel's seaworthiness.

4. Resource Implication	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> 4.1. fully operational vessel, and or 4.2. appropriate simulations of checking the seaworthiness of a small vessel
5. Methods of Assessment	<p>Competency should be assessed:</p> <ul style="list-style-type: none"> 5.1. Through direct observation / demonstration 5.2. Portfolio (Updating of SOLAS Certificate)
6. Context of Assessment	<ul style="list-style-type: none"> 6.1. Assessment is to be conducted at the workplace or in a simulated work environment.

UNIT OF COMPETENCY: PERFORM ROUTINE MAINTENANCE TASKS ON A SMALL COASTAL VESSEL

UNIT CODE: AGR642306

UNIT DESCRIPTOR: This unit covers the skills and knowledge required to perform routine remedial, preventative and survey deck maintenance on coastal vessels. This includes carrying out basic deck maintenance, cleaning tasks, marine painting and checks on deck machinery and systems.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Perform basic deck maintenance	<ul style="list-style-type: none">1.1. Checks of deck surfaces are carried out in accordance with planned <i>maintenance</i> system1.2. Any <i>deterioration or corrosion of a vessel's deck surfaces</i> is identified and appropriate maintenance action initiated or carried out in accordance with planned maintenance system1.3. Minor faults and imperfections in painted surfaces are repaired in accordance with procedures1.4. Weathered surfaces are restored using cleaners and liquid abrasives in accordance with OH&S and pollution control requirements, planned maintenance procedures and manufacturer's instructions1.5. Tools and equipment are correctly identified and used in accordance with OH&S requirements, company procedures and equipment manufacturer's instructions1.6. Marine surfaces are prepared for the application of the required marine coating

	<p>1.7. Maintenance materials are obtained, handled, prepared and applied in accordance with OH&S and pollution control requirements, company procedures and manufacturer's instructions</p> <p>1.8. Records of maintenance work carried out are completed in accordance with procedures</p>
2. Carry out cleaning activities	<p>2.1. Appropriate chemicals, cleaning agents and equipment are selected to clean an assigned area of the vessel</p> <p>2.2. Manufacturer's warning and instructions regarding the use of chemicals and cleaning agents are read, understood and applied</p>
3. Carry out cleaning activities (continued)	<p>3.1. Cleaning tasks are completed in the assigned area in accordance with procedures and manufacturer's instructions</p> <p>3.2. Chemicals, cleaning agents and equipment are correctly stored after use</p>

<p>4. Select and apply appropriate paint systems for areas aboard a vessel</p>	<p>4.1. Appropriate paints and painting equipment for a particular surface are selected in accordance with planned maintenance procedures and the paint manufacturer's instructions</p> <p>4.2. Marine paints are applied using appropriate application equipment in accordance with OH&S requirements, planned maintenance procedures and manufacturer's instructions</p> <p>4.3. Problems in the application of paints are identified and reported and/or appropriate remedial action initiated</p> <p>4.4. Debris from maintenance activities is disposed of, or stored, in accordance with established procedures</p> <p>4.5. Paint and painting equipment are correctly stored after use</p>
<p>Check and perform basic maintenance on deck fittings, equipment and systems</p>	<p>4.6. <i>Tools and equipment for basic maintenance</i> are correctly identified and used in accordance with OH&S requirements, planned maintenance procedures and equipment manufacturer's instructions</p> <p>4.7. Maintenance materials are obtained, handled, prepared and applied in accordance with OH&S and pollution control requirements, company procedures and manufacturer's instructions</p> <p>4.8. Defective deck fittings, equipment and systems are identified and reported, repaired and/or replaced as required by planned maintenance procedures</p> <p>4.9. Maintenance equipment is correctly cleaned and stored after use</p> <p>4.10. Debris and unused materials are disposed of or returned to store in accordance with OH&S and pollution control requirements, planned maintenance procedures and manufacturer's instructions</p>

<p>5. Follow safety and hazard control procedures</p>	<p>5.1. Personal protection equipment (PPE) is used in accordance with regulations and OHS policy</p> <p>5.2. Maintenance hazards are identified and action is taken to minimize or eliminate risk to personnel, ship and the environment</p> <p>5.3. Safety, hazard minimization and pollution control procedures and regulations are followed at all times during maintenance and repair operations</p> <p>5.4. Where relevant, procedures and precautions necessary for entry into confined spaces on a vessel, after authorization by a responsible officer, are correctly followed</p>
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Maintenance of a vessel may be carried out:	1.1. while underway 1.2. when berthed or moored 1.3. when slipped or in dry dock
2. Maintenance may include:	2.1. identification of any deterioration of a deck areas, machinery and fittings 2.2. cleaning of areas of the vessel 2.3. repairs of minor faults and imperfections in painted surfaces 2.4. identification of faulty equipment or fittings and arranging for repair or replacement 2.5. restoration of weathered surfaces 2.6. preparation of marine surfaces prior to the application of the prescribed marine coating 2.7. selection and application of appropriate marine paints for particular surfaces
3. Maintenance tools and equipment may include:	3.1. hand tools including chipping hammers and scrapers 3.2. electric power tools such as grinders, sanders and drills, 3.3. pneumatic power tools such as grinders, sanders and drills 3.4. marine preservative finish application equipment such as brushes, spay guns, rollers 3.5. rinsing and storing equipment 3.6. personal protection clothing and equipment such as: 3.6.1. eye and ear protection 3.6.2. safety boots 3.6.3. dust and fume masks including various cartridges

4. Deterioration of vessel's deck areas, machinery and fittings may include:	4.1. corrosion to deck, fittings and equipment 4.2. weathering of surfaces 4.3. wearing of fittings and equipment
5. Documentation:	5.1. planned maintenance system or other preventative maintenance scheme 5.2. maintenance records 5.3. vessel and equipment manufacturer's instructions, specifications and recommended procedures 5.4. instructions of Philippine maritime authorities
6. Government and international code requirements:	6.1. Relevant Philippine Government legislation, regulations and orders and international codes related to routine maintenance on coastal vessels (including pertinent Marina regulations and related memorandums).

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidences that the candidate :</p> <ul style="list-style-type: none"> 1.1. Performed basic deck maintenance 1.2. Carried out cleaning activities 1.3. Selected and applied appropriate paint systems for areas aboard a vessel 1.4. Checked and performed basic maintenance on deck fittings, equipment and systems 1.5. Exercised all required safety, environmental and hazard control precautions and procedures during planned maintenance operations 1.6. Communicated effectively with others when carrying out maintenance procedures onboard a vessel
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1. Relevant Marina regulations and related memorandums 2.2. Relevant OH&S regulations and policies 2.3. Procedures for the checking the deck areas, machinery and fittings of a vessel as part of planned routine maintenance procedures 2.4. The nature and causes of corrosion of marine surfaces and structures and the available methods for its control 2.5. Corrosion control measures including surface preparation and painting and antifouling 2.6. Paints and painting equipment used in marine maintenance and the related procedures and precautions to be taken for preparation, application and storage

	<p>2.7. Safety, environmental and hazard control precautions and procedures relevant to planned maintenance operations</p> <p>2.8. Procedures for the disposal of debris and waste during planned maintenance s</p> <p>2.9. Storage principles of paints, chemicals and cleaning agents used in planned maintenance operations</p> <p>2.10. Procedures for the correct entry into a confined space onboard a vessel including OHS precautions, testing of unknown atmospheres, use of a confined space entry permit, and procedures as defined in the Safety Management System (where required) or in industry standards and guidelines.</p> <p>2.11. Principle features of the structure of vessels</p> <p>2.12. A basic understanding of the materials used in vessel construction</p> <p>2.13. Construction, layout and subdivision requirements of a typical vessel, including an understanding of freeboard and weather deck, watertight compartments, weathertight compartments, the bulkhead of the vessel and collision bulkhead</p> <p>2.14. Maritime communication techniques needed during slipping and maintenance</p> <p>2.15. Problems related to planned maintenance systems for deck areas, machinery and fittings and appropriate action and solutions</p> <p>2.16. Deck maintenance records that must be maintained on a vessel</p>
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3. Underpinning Skills	<p>3.1. Carrying out all required routine maintenance procedures</p> <p>3.2. Taking required precautions when carrying out all required routine maintenance procedures</p> <p>3.3. Literacy skills used for:</p> <p>3.3.1. reading and interpreting regulations and vessel and equipment manufacturer's instructions</p> <p>3.3.2. communicating with other crew members during routine maintenance operations.</p>
4. Resource Implication	<p>The following resources must be provided:</p> <p>4.1. fully operational vessel, and or</p> <p>4.2. appropriate simulation of routine maintenance operations required on a coastal vessel</p>
5. Methods of Assessment	<p>Competency should be assessed:</p> <p>5.1. Through direct observation / demonstration</p> <p>5.2. Portfolio</p>
6. Context of Assessment	<p>6.1. Assessment is to be conducted at the workplace or in a simulated work environment.</p>

UNIT OF COMPETENCY: OPERATE AND TROUBLESHOOT LOW
POWERED MARINE ENGINES

UNIT CODE : AGR642307

UNIT DESCRIPTOR: This unit covers the skills and knowledge required to routinely operate low powered diesel engines within normal parameters. It also covers the skills required to locate causes of trouble in performance and make minor repairs.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold terms are elaborated in the Range of Variables</i>
1. Initiate start up and shut down operations of low powered diesel engines	<ul style="list-style-type: none">1.1 Operations are planned and carried out according to established safety rules and regulations1.2 Timing and degree of preparation of engine and systems is appropriate to the intended operation and complies with operating instructions1.3 Sequence and timing of start up and shut down of engine and systems meets the requirements for safe and efficient operation1.4 Engine parameters and instrument readings are maintained within defined levels during start up and shut down operations1.5 Deviations from the norm are promptly identified, rectified and reported1.6 Adjustments made achieve a safe, efficient and environmentally responsible operation and are within the role holder's responsibility1.7 Sufficient notice of operations is given to enable other relevant personnel to carry out their responsibilities safely and efficiently1.8 Inability to start up or shut down engine as required is reported promptly and accurately to an appropriate authority

<p>2. Maintain output of low powered diesel engines</p>	<p>2.1 Operations are planned and carried out according to established safety rules and regulations</p> <p>2.2 Engine is monitored according to schedules, operating parameters and instructions</p> <p>2.3 Engine system condition is assessed accurately in light of information available from local and remote indicators and physical inspection</p> <p>2.4 Engine output meets notified demand conditions throughout normal operation</p> <p>2.5 Engine parameters are maintained within defined limits during normal running</p> <p>2.6 Sequence and timing of adjustments to engine is that required for optimum safety and efficiency in achieving the desired condition</p>
<p>3. Respond to irregularities</p>	<p>3.1 Deviations from the norm are correctly identified, rectified and reported.</p> <p>3.2 Action taken in the event of irregularities is appropriate to their significance and optimises the safety and efficiency of operations.</p>
<p>4. Troubleshoot engine faults and perform minor repair</p>	<p>4.1. Operating difficulties caused by fuel-related factors are identified and rectified where possible according to troubleshooting guides and manufacturers instructions</p> <p>4.2. Electrical faults are identified and rectified according to troubleshooting guides and manufacturer's instructions</p> <p>4.3. Engines that were immersed are serviced according to manufacturer's instructions</p> <p>4.4. Propulsion faults are identified and repaired according to manufacturer's instructions</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Operations:	<ul style="list-style-type: none"> 1.1. start up and shut down of engine as a routine with the system functioning correctly 1.2. emergency shut down to minimise damage 1.3. operate under direct instruction for malfunctioning engine system 1.4. manual adjustment of controls to correct minor deviation 1.5. monitoring of remote operation 1.6. fuelling and lubrication requirements are met.
2. Safety rules and regulations:	<ul style="list-style-type: none"> 2.1. code of safe working practices 2.2. enterprise's occupational health and safety procedures. 2.3. engine shutdown at prescribed distance from destination or when approaching another vessel
3. Engine:	<ul style="list-style-type: none"> 3.1. Marine diesel engines (16 to 80 HP) burning diesel oil or marine diesel oil as the power source for the propulsion of the vessels, the power source for an auxiliary system; with shifting gears 3.2. Gasoline engines (3 to 16 HP) burning gasoline as the power source for the propulsion of the vessels, the power source for an auxiliary system; no shifting gear feature 3.3. Converted automobile truck gas / diesel engines (transmission converted to reduce rpm) 3.4. One-stroke 3.5. 2-stroke

4. Parameters	4.1. pressure 4.2. levels 4.3. flow 4.4. temperature 4.5. speeds
5. Monitoring:	5.1. frequency 5.2. scope 5.3. timing 5.4. checks 5.5. tests 5.6. inspections 5.7. fuel requirements (including energy efficiency) 5.8. noise 5.9. oil or fuel leaks.
6. Schedules:	6.1. parameters and instructions 6.2. manufacturers' information 6.3. enterprise requirements 6.4. onboard management requirements.
7. Action to be taken in the event of irregularities	7.1. informing authority 7.2. appropriate investigative techniques and safety procedures 7.3. fuel and lubrication transfer contained and disposed meeting International Convention for the Prevention of Pollution from Ships (MARPOL) requirements

8. Troubleshooting includes:	<ul style="list-style-type: none"> 8.1. Fuel related factors 8.2. Checking fuel level 8.3. Checking injector pump 8.4. Bleeding injector pump, if appropriate (for diesel engines only) 8.5. Checking fuel filter if clean 8.6. Checking if carburetor is jammed 8.7. Electrical factors 8.8. Checking ignition system (contact point, CDI) 8.9. Cleaning and drying spark plugs 8.10. Propulsion faults 8.11. Checking connecting rod for breach
9. Documentation:	<ul style="list-style-type: none"> 9.1. motor manufacturer's instructions and recommended procedures 9.2. instructions of Philippine Maritime Authorities
10. Government and international code requirements:	<ul style="list-style-type: none"> 10.1. Relevant Philippine Government legislation, regulations and orders and international codes related to the maneuvering of coastal vessels (including pertinent Marina regulations and related memorandums). 10.2. EO 305, Devolution of Registration of Municipal Fishing Vessels to LGUs 10.3. Fishing boat license requirements 10.4. Requirements for license to operate within municipal waters 10.5. Licensing of fishing gear requirements 10.6. Licensing of fishermen requirements

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidences that the candidate :</p> <ol style="list-style-type: none"> 1.1. Operated, started up and shut down low powered diesel engines and responded appropriately to irregularities 1.2. Ensured that preparations for the operations are complete 1.3. Started up, shut down, monitored and operated engines in a safe manner 1.4. Maintained steady running of the engine and complied with alarm acceptance procedures 1.5. Carried -out adjustment and regulation of engine, including to achieve optimal fuel efficiency 1.6. Carried out alteration of output as required. 1.7. Performed troubleshooting of engine faults and minor repair
<p>2. Underpinning Knowledge and Attitudes</p>	<p>2.1. Relevant Marina regulations and related memorandums</p> <p>Engine and system operating instructions</p> <p>Operating parameters and values</p> <p>Alarm and emergency shut down parameter values</p> <p>Different types of diesel engines and their variations likely to be encountered</p> <p>Method of operation of control systems</p> <p>Optimising fuel efficiency</p> <p>Procedures relating to:</p> <p>Sequence and timing of operations and adjustments</p> <p>Response to alarms and emergencies affecting engines including contingency plans</p> <p>Fuel isolation procedures and likely hazards.</p>

	<p>Principles relating to: operation of marine diesel engines sufficient to recognise malfunction, implement initial corrective action and seek advice 2.10.1. engineering science to appreciate the reasons for the method of safe operations.</p>
3. Underpinning Skills	<p>3.1. Operating high, medium and slow speed diesel engines including the associated systems: fuel, such as diesel oil/marine diesel oil cooling lubrication purification, transfer and storage control starting and stopping battery power generation and use.</p> <p>3.2. Carrying out the start up from both warm and cold conditions to standby or full operating condition including pre- and post-start up checks</p> <p>3.3. Carrying out emergency shut down and normal shut down for short and long term periods including checks and isolation to organisational requirements</p> <p>3.4. Operating the engine in various modes including: Monitoring and setting restrictions on remote operation Local manual operation Emergency modes of operation</p>

	<p>3.15. Monitoring aspects of the engine and system condition including:</p> <p>pressure flows temperatures levels speeds vibrations expansion emissions abnormalities. fuel efficiency fuel or oil leaks noise</p>
4. Resource Implication	<p>The following resources should be provided:</p> <p>4.1. fully operational low powered diesel engine on a small vessel, and or</p> <p>4.2. a low powered diesel engine in a suitably simulated vessel situation</p>
5. Methods of Assessment	<p>Competency should be assessed:</p> <p>5.1. Through direct observation / demonstration</p> <p>5.2. Portfolio</p>
6. Context of Assessment	<p>6.1. Assessment is to be conducted at the workplace or in a simulated work environment.</p>

UNIT OF COMPETENCY: APPLY WEATHER INFORMATION WHEN
NAVIGATING A VESSEL

UNIT CODE: AGR642308

UNIT DESCRIPTOR: This unit covers the skills and knowledge required to predict meteorological and ocean conditions and apply them to ensure the safe navigation of a coastal vessel, including deciphering and applying information obtained from observations, reports and instruments, reliably and accurately calculating tides in accordance with official tide charts and forecasting weather for an intended near coastal voyage using all available data

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Obtain and decipher weather and oceanographic information	<ul style="list-style-type: none">1.1. Ocean and weather conditions are observed and correctly interpreted in accordance with established nautical and <i>meteorological</i> practice1.2. Basic measurements of meteorological parameters are correctly made and recorded using established procedures1.3. Relevant meteorological charts, publications and related <i>documentation</i> are updated, stored and maintained1.4. Relevant <i>navigational</i> charts, nautical publications and related documentation are used for <i>voyage</i> planning and identification of navigational hazards in accordance with established procedures

<p>2. Apply weather and oceanographic data to safe navigation</p>	<p>2.1. Weather and ocean condition hazards relevant to a proposed coastal voyage are identified using relevant forecasts based on interpretation of meteorological observations, reports and measurements</p> <p>2.2. The route for a voyage is modified as required to take into account weather and sea condition hazards in accordance with established navigational practice and operational instructions</p>
<p>3. Maintain records of weather and oceanographic information and forecasts</p>	<p>3.1. Meteorological measurements, observations, reports and forecasts are recorded and filed in accordance with company procedures and regulatory requirements</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Voyages being planned and conducted may include:	1.1. any near coastal voyage navigable by the size and type of vessel concerned 1.2. passages through 1.3. traffic separation schemes in near coastal areas 1.4. tidal restricted areas 1.5. VTS controlled areas 1.6. pilotage water under conditions of restricted visibility
2. Navigation may occur in conditions of:	2.1. clear visibility using visual navigational techniques 2.2. restricted visibility using parallel indexing and/or electronic chart systems 2.3. clear visibility using a combination of visual and electronic techniques
3. Instruments may include:	3.1. air and sea thermometers 3.2. barometers 3.3. hydrometers 3.4. anemometers 3.5. wind strength and direction instruments 3.6. instruments for measuring sea swell height, direction and period
4. Meteorological and oceanographic parameters may include	4.1. atmospheric pressure 4.2. pressure gradient 4.3. air temperature 4.4. relative humidity 4.5. wind strength 4.6. wind direction 4.7. swell height, direction and period 4.8. visibility 4.9. cloud cover

<p>5. Documentation:</p>	<p>5.1. operational orders 5.2. navigational charts of coastal waters 5.3. meteorological and oceanographic publications 5.4. coastal weather reports, charts and satellite images 5.5. annual and weekly notices to mariners 5.6. navigational warning records 5.7. vessel's log 5.8. instructions of Philippine maritime authorities</p>
<p>6. Government and international code requirements:</p>	<p>6.1. Relevant Philippine Government legislation, regulations and orders and international codes related to the manoeuvring of coastal vessels (including pertinent Marina regulations and related memorandums).</p>

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidences that the candidate:</p> <ul style="list-style-type: none"> 1.1. Obtained and deciphered weather and oceanographic data collected from observations, reports, charts, satellite images and instruments 1.2. Identified and evaluated weather forecasting problems and determine appropriate solutions 1.3. Accessed, used and maintained meteorological charts, meteorological publications and related weather and oceanographical documentation 1.4. Used weather forecasts to ensure safe navigation
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1. Relevant Marina regulations and related memorandums 2.2. Principles and procedures of weather forecasting using information obtained from observations, reports and instruments including: <ul style="list-style-type: none"> 2.2.1. cloud classifications 2.2.2. cyclones, storms and gales 2.2.3. tropical meteorology 2.2.4. ocean currents 2.2.5. weather data provided by shipboard instruments 2.2.6. sea state 2.2.7. tide prediction & use of tide tables 2.3. Basic principles and procedures for making meteorological and oceanographic measurements using appropriate instruments and interpreting and deciphering the results 2.4. Sources of weather and oceanographic reports and methods for their interpretation 2.5. Effects on navigation and shiphhandling of wind, currents and bottom topography

	<p>2.6. Problems in the forecasting of weather and oceanographic information to navigation of a vessel and appropriate action and solutions</p> <p>2.7. Procedures to be followed during gale conditions and cyclones including the means of securing a vessel in a cyclone mooring</p> <p>2.8. Maritime communication techniques</p>
3. Underpinning Skills	<p>3.1. application of forecast of likely weather and oceanic conditions to the development of a typical coastal passage plan</p> <p>3.2. the calculation of height and time of low and high water at locations listed in the tide tables</p> <p>3.3. Literacy skills used for reading and interpreting regulations and weather information</p>
4. Resource Implication	<p>The following resources must be provided:</p> <p>4.1. fully operational vessel, and or</p> <p>4.2. an appropriate simulation</p>
5. Methods of Assessment	<p>Competency should be assessed:</p> <p>5.1. Through direct observation / demonstration</p> <p>5.2. Portfolio</p>
6. Context of Assessment	<p>6.1. Assessment is to be conducted at the workplace or in a simulated work environment.</p>

UNIT OF COMPETENCY: CONTRIBUTE TO SAFE NAVIGATION

UNIT CODE : AGR642309

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to assisting the officer of the watch safely navigate the vessel or conducting a watch in sole charge of a vessel.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Contribute to monitoring and controlling a navigational watch	<ul style="list-style-type: none">1.1 Information required for the exchange of a <i>watch</i> is complete, accurate and relevant to both the personnel and the existing circumstances.1.2 Hand over and relief of the watch conforms to accepted principles and procedures.1.3 Watch information/instructions that are unclear or ambiguous are always clarified.1.4 Lights, shapes and sound signals displayed or given conform with the requirements contained in the International Regulations for Preventing Collisions at Sea and to instructions received.1.5 Lookout is maintained at all times in such a manner as to conform to accepted principles and procedures.1.6 Reports and exchanges of navigational information are clear and concise and in line with accepted principles and procedures.1.7 Traffic, the vessel, weather watch keeping and hazards are monitored with a frequency and intensity conforming to accepted principles and procedures.1.8 Frequency and degree of performance checks to navigational equipment complies with principles and procedures, and skipper's and owner's requirements.1.9 Advice or clarification is sought immediately whenever in doubt and from the appropriate people.

<p>2. Maneuver the vessel when contributing to the efficient running of the watch</p>	<p>2.1 Maneuvers are made so as to safely progress the planned voyage and comply fully with instructions received.</p> <p>2.2 Engine control systems are operated to progress the planned passage and are designed to complement helm movements.</p> <p>2.3 Course is steered steadily within acceptable limits with respect to the area of navigation and the existing sea state.</p> <p>2.4 Course alterations are smooth and controlled with minimal over shoot.</p> <p>2.5 Communication is clear, concise and acknowledged at all times according to accepted principles and procedures.</p> <p>2.6 Steering modes are changed according to operating instructions, area, wind and sea state and according to marine notices and accepted principles and procedures.</p> <p>2.7 Vessel steering systems remain within safe operating limits during normal maneuvers.</p>
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Information obtained from:	1.1. colleagues 1.2. watch keeper 1.3. skipper.
2. Watch routines to be maintained when in charge of the bridge watch::	2.1. during the day 2.2. at night 2.3. in narrow waters 2.4. in coastal waters 2.5. in severe weather conditions 2.6. in poor visibility 2.7. during pilotage or at anchor. 2.8. during the occurrence of emergencies
3. Principles and procedures as itemized in:	Marina regulations and memorandums bridge procedures guide enterprise procedures and standing orders

4. Hazards with respect to:	vessel position weather and sea state traffic and other obstructions status of equipment and systems 4.1. bar and sea entrance crossings.
5. Monitored using:	sight radar sound 5.1. echo sounder
6. Maneuvers may involve:	6.1. stopping 6.2. going astern 6.3. crew overboard.
7. Engine control systems:	7.1. steering systems 7.2. throttle 7.3. gear box.
8. Sea state:	8.1. calm 8.2. rough 8.3. in a current 8.4. tidal conditions.
9. Documentation:	9.1. operational orders 9.2. navigational charts 9.3. regulations 9.4. ship's log 9.5. vessel's operational plan 9.6. vessel manufacturer's instructions and recommended procedures 9.7. instructions of Philippine maritime authorities
10. Government and international code requirements:	10.1. Relevant Philippine Government legislation, regulations and orders and international codes related to the watchkeeping duties on coastal vessels (including pertinent Marina regulations and related memorandums).

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidences that the candidate :</p> <ul style="list-style-type: none"> 1.1. Manoeuvred a vessel of 3.1 GT up to 150 GT <ul style="list-style-type: none"> 1.1.1. safely in normal and emergency situations 1.1.2. in normal and heavy weather conditions 1.1.3. when underway 1.1.4. in berthing and unberthing operations 1.1.5. when anchoring or mooring 1.2. Exercised all required safety and hazard control procedures when manoeuvring the vessel 1.3. Identified typical manoeuvring problems and take appropriate action 1.4. Communicated effectively with others during manoeuvring operations
<p>6. Underpinning Knowledge and Attitudes</p>	<p>Marina operational guidance for persons on a navigational watch International Regulations for Preventing Collisions at Sea bridge procedures guides enterprise procedures basic meteorology sufficient to recognise imminent change in the weather and assist in reading meteorological instruments identification of sources of information responsibilities of a look out nautical terminology and the methods of reporting operation of RADAR equipment echo sounding equipment classes of and responsibilities between vessels give way and stand on rules</p>

	<p>International Rules for Preventing Collisions at Sea</p> <p>sound signals</p> <p>distress signals</p> <p>buoyage and navigation mark lights</p> <p>buoyage and navigation mark sound signals and top marks sufficient for them to be recognised</p> <p>emergency steering systems</p> <p>use of operational controls on an auto pilot</p> <p>bridge communications</p> <p>occasions when convention is to seek assistance</p> <p>assessing the risk of collision by sight and RADAR</p> <p>use of helm and engines</p> <p>emergency manoeuvres</p>
3. Underpinning Skills	<p>3.1. Using helm and engines</p> <p>3.2. Assessing the risk of collision by sight and RADAR</p> <p>3.3. Using operational controls on an auto pilot</p> <p>3.4. Implementing emergency procedures</p> <p>3.5. Literacy skills used for:</p> <p>3.6. reading and interpreting regulations and vessel manufacturer's instructions</p> <p>3.7. communicating with other members of the bridge team.</p>
4. Resource Implication	<p>The following resources should be provided:</p> <p>4.1. fully operational vessel, and or</p> <p>4.2. an appropriate vessel simulator</p>
5. Methods of Assessment	<p>Competency should be assessed:</p> <p>5.1. Through direct observation / demonstration</p> <p>5.2. Portfolio</p>
6. Context of Assessment	<p>6.1. Assessment is to be conducted at the workplace or in a simulated work environment.</p>

UNIT OF COMPETENCY: APPLY BASIC FOOD HANDLING AND SAFETY PRACTICES

UNIT CODE: AGR642310

UNIT DESCRIPTOR : This is a core unit of competency for all sectors of the seafood industry covering food safety procedures and practices and risk management. The unit covers personal hygiene and conduct, and seafood handling and storage. This unit applies to seafood and aquatic products and is essential to all qualifications in the seafood industry.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold terms are elaborated in the Range of Variables</i>
1. Identify hazards and risks to seafood and aquatic product	1.1 Key <i>hazards and risks</i> associated with the individual's <i>work area</i> or area of responsibility are identified, assessed, reported and controlled using appropriate workplace procedures.
2. Follow enterprise hygiene standards, procedures and practices	2.1 Personal hygiene complies with work area and OHS requirements. 2.2 Appropriate personal protective clothing and equipment is selected, checked, used and maintained in accordance with enterprise and OHS requirements. 2.3 <i>Hygiene procedures</i> are strictly followed in accordance with <i>enterprise, legislative</i> and OHS <i>requirements</i> .

<p>3. Handle and store seafood and aquatic product</p>	<p>3.1 Seafood and aquatic products are handled and stored in accordance with enterprise, legislative and OHS requirements.</p> <p>3.2 Seafood and aquatic products are handled and stored in a manner that avoids damage, meets hygiene standards, avoids contamination and maintains the quality of the product.</p> <p>3.3 Seafood and aquatic products are stored at the correct temperature required to safely maintain the product in optimal condition and freshness.</p>
<p>4. Follow the enterprise food safety program</p>	<p>4.1 All work activities undertaken are consistent with and conform to the requirements of an approved enterprise food safety program.</p> <p>4.2 Areas of risk in the individual's work area within the enterprise are identified, evaluated, reported, controlled and monitored.</p> <p>4.3 Corrective actions are taken within the individual's scope of responsibilities to minimize risk in accordance with the enterprise food safety program.</p> <p>4.4 Risks beyond the control of the individual are promptly reported to the appropriate person(s).</p> <p>4.5 Records are completed according to enterprise requirements and work responsibility.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Hazards and risks may include:	<p>1.1. Biological</p> <p>bacteria</p> <p>moulds</p> <p>yeast</p> <p>other organisms</p> <p>contaminants</p> <p>1.2. Physical</p> <p>broken glass, metal, plastic, fibre glass</p> <p>foreign matter</p> <p>sewage</p> <p>soils, water</p> <p>other organisms</p> <p>temperature changes or fluctuations</p> <p>1.3. Chemicals (additives, chemicals and natural poisons)</p> <p>1.4. Hygiene</p> <p>personal habits or practices (smoking, spitting, nose blowing, coughing, hand washing)</p> <p>reporting illness</p> <p>clothing (maintenance and laundering)</p> <p>1.5. Cleanliness of equipment, apparatus, work surfaces, containers.</p>
2. Work areas or places include:	<p>2.1. retail or wholesale outlet</p> <p>2.2. seafood and aquatic product processing plant</p> <p>2.3. fishing vessel</p> <p>2.4. aquaculture operation; farm, hatchery, nursery</p> <p>2.5. storage facility, dispatch, transport operation</p> <p>2.6. cargo / storage areas</p> <p>2.7. Fish treating area</p> <p>2.8. Fish chutes</p>

3. Work area:	3.1. filleting area 3.2. fish cleaning area 3.3. crustacean cooking area 3.4. fish packing area 3.5. toilet/shower block and ablutions area 3.6. cool rooms 3.7. cargo / storage areas 3.8. Fish treating area 3.9. Fish chutes
4. Enterprise standard operating procedures relating to workplace hygiene:	4.1. personal habits or hygiene 4.2. use of personal protective clothing and equipment 4.3. equipment/work area 4.4. product contamination and cross contamination.
5. Enterprise and legislative requirements:	5.1. policies and procedures 5.2. licensing requirements 5.3. regulatory requirements 5.4. industrial awards and agreements industry codes or codes of practice.

<p>6. Enterprise requirements:</p>	<ul style="list-style-type: none"> 6.1. occupational health and safety policies, procedures and programs 6.2. use of electronic communication equipment 6.3. access and equity policy, principles and practice 6.4. client service standards 6.5. communication channels and reporting procedures 6.6. company issued identification such as card, badge or pass 6.7. company policy and procedures, including personnel practices and guidelines 6.8. defined resource parameters 6.9. dress and presentation requirements 6.10. duty of care, code of conduct, code of ethics 6.11. emergency response and evacuation procedures 6.12. notification of authorities 6.13. employer and employee rights and responsibilities 6.14. policies and procedures relating to won role, responsibility and delegation 6.15. quality and continuous improvement processes and standards 6.16. records and information systems and processes 6.17. induction and refresher training manuals 6.18. pre- and post- operational checks of equipment.
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<p>7. OHS requirements may include:</p>	<p>7.1. relevant government occupational health and safety acts, regulations, national standards, codes of practice and guidance notes which may apply in jurisdiction</p> <p>7.2. enterprise specific occupational health and safety policies and procedures</p> <p>7.3. examples of specific task related procedures may include: hazard identification, risk assessment and control (incorporating the hierarchy of control model) accident and incident reporting manual handling</p> <p>7.4. use and storage of chemicals.</p>
<p>8. Seafood and aquatic product:</p>	<p>8.1. live seafood</p> <p>8.2. seafood (fillets, whole fish, shell fish, prawns etc)</p> <p>8.3. finished/processed product (smoked, dried, frozen etc)</p> <p>8.4. other aquatic products: shells skins eggs aquarium fish pearls 8.4.1. by-products.</p>
<p>9. Handling and storage:</p>	<p>9.1. to prevent damage (e.g. flesh–ripped, torn, bruised, squashed; product dropped or thrown)</p> <p>9.2. appropriate to product (e.g., fillets, whole fish, shell fish, frozen, live stock)</p> <p>9.3. storage at correct temperatures and in appropriate areas</p> <p>9.4. includes safe use and storage of knives and tools used by the worker.</p>

10. Cross contamination caused by:	10.1. cooked product contaminated by raw product 10.2. edible product contaminated by waste 10.3. movement of people, product or equipment between areas.
11. Requirements of an approved food safety program:	11.1. approved by local council or appropriate health department 11.2. risk identification 11.3. identification of risk areas (control points) 11.4. minimisation of risks 11.5. monitoring risks (control points) 11.6. reporting and recording requirements 11.7. hazard analysis critical control point (HACCP) based programs, where applicable.
12. Areas of risk (control points):	12.1. harvesting, handling, transporting 12.2. purchasing, delivery and storage 12.3. preparation, processing and cooking 12.4. cooling, freezing, defrosting, heating, reheating, storage 12.5. holding or display.
13. Monitoring:	13.1. own tasks and responsibilities 13.2. recording data 13.3. by visual checks 13.4. following inspection requirements of enterprise risk management plan.

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidences that the candidate:</p> <ul style="list-style-type: none"> 1.1. Inspected the work area to identify common seafood and aquatic product food safety hazards and associated risks 1.2. Maintained personal hygiene and conduct to minimize risk to seafood and seafood product safety 1.3. handled and stored seafood and aquatic product safely 1.4. completed recording/reporting requirements. <p>Assessment must confirm knowledge of:</p> <ul style="list-style-type: none"> 1.5. own responsibilities within the enterprise food safety plan 1.6. key requirements of the food safety plan 1.7. sources of information on food safety and personal hygiene requirements such as enterprise standard operating procedures or codes of practice.
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1. broad knowledge of basic food safety principles and requirements 2.2. enterprise hygiene and food safety procedures 2.3. legal and regulatory requirements pertaining to seafood production, storage, handling and packaging relevant to area of work 2.4. personal hygiene practices and clothing requirements relevant to area of work 2.5. common hazards and sources of contamination in area of work 2.6. enterprise food safety recording requirements 2.7. occupational health and safety requirements.

3. Underpinning Skills	<p>3.1. The essential skills a person needs to perform work to support the competence include:</p> <p>3.2. identification of hazards, contaminants and risks or control points</p> <p>3.3. handling seafood and aquatic products to prevent damage, spoilage, waste</p> <p>3.4. storing seafood and aquatic products in appropriate areas at correct temperatures.</p> <p>3.5. Literacy skills used for:</p> <p>3.6. reading and interpreting relevant enterprise documentation including standard operating procedures and the food safety plan where available</p> <p>3.7. recording/reporting according to enterprise procedures.</p> <p>3.8. Numeracy skills used for:</p> <p>3.9. recording and reporting data.</p>
4. Resource Implication	<p>Resources must include:</p> <p>4.1. Relevant documentation (enterprise food safety plan, standard operating procedures, code of practice, personal protective equipment, documentation etc).</p>
5. Methods of Assessment	<p>5.1. The following assessment methods are suggested:</p> <p>5.2. Through direct observation / demonstration</p> <p>5.3. Portfolio</p>
6. Context of Assessment	<p>6.1. Assessment is to be conducted at the workplace or in a simulated work environment.</p> <p>6.2. Assessment must relate to the individual's work area or area of responsibility.</p>

UNIT OF COMPETENCY: ADJUST AND POSITION BEACH SEINES, MESH NETS OR GILL NETS

UNIT CODE: AGR642311

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to interpret gear plans and adjust beach seines and gill nets before deployment. The unit also involves maintaining, adjusting and positioning the vessel and gear during deployment, fishing and retrieval in order to optimize the catch. This unit assumes some level of familiarity with the gear and is appropriate to an experienced fisher. These fishing gears are typically used in Municipal Fisheries.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> Bold terms are elaborated in the Range of Variables
1. Organize a work area to adjust beach seines, mesh nets or gill nets	<p>1.1 Unsafe and inefficient aspects of the work area are identified and rectified.</p> <p>1.2 Clear instructions are provided to all crew covering the task and the methods to be used.</p> <p>1.3 All tools and equipment necessary for the completion of the task are made available when needed.</p> <p>1.4 Equipment and techniques devised for slinging beach seines, mesh nets or gill nets are appropriate for planned operations.</p>

<p>2. Adjust beach seine, mesh net or gill net components to optimize catch</p>	<p>2.1 Criteria for assessing the sub-optimal performance of beach seines, mesh nets or gill nets are used to judge effectiveness.</p> <p>2.2 Measurements and comparisons are made of beach seine, mesh net or gill net components to confirm symmetry.</p> <p>2.3 Effectiveness of deployment of beach seine, mesh net or gill net components is assessed by comparing observed operation of components with gear plans.</p> <p>2.4 Beach seine, mesh net or gill net components are adjusted, reconditioned or constructed to rectify sub-optimal gear performance.</p>
<p>3. Position beach seines, mesh nets or gill nets to optimize catch</p>	<p>3.1 Fishing strategy is developed to incorporate all relevant factors.</p> <p>3.2 Catches are analyzed to determine the effectiveness of beach seines, mesh nets or gill nets.</p> <p>3.3 Position of beach seines, mesh nets or gill nets is monitored and altered when necessary to optimize the catch.</p> <p>3.4 Vessel position during the deployment and retrieval of beach seines, mesh nets or gill nets is monitored for the factors that contribute to a successful fishing strategy and altered as required.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Criteria:	1.1. species composition of catch 1.2. amount of catch per unit of effort 1.3. amount of catch in comparison with other vessels 1.4. degree and character ground contact 1.5. amount of debris in the net 1.6. asymmetry between each side of a net 1.7. symmetry of: sweeps head ropes foot ropes 1.8. determining and monitoring tolerance to: rips, holes and wear to netting material wear of gear components insecurity and distortion of hangings for net and lashings for ground gear and flotation distortion of gear components stretching rope 1.9. quality of by-catch reduction devices 1.10. absence or breakage of gear components.
2. Beach seines, mesh nets or gill nets:	2.1. beach seines 2.2. gill nets for coastal 2.3. estuarine species

3. Components:	<ul style="list-style-type: none"> 3.1. sweeps and bridles 3.2. netting material 3.3. hangings 3.4. flotation devices 3.5. ballast 3.6. by-catch reduction devices 3.7. flags, buoys and droppers 3.8. gear detection devices 3.9. connecting devices: knots 3.10. clips.
4. Factors:	<ul style="list-style-type: none"> 3.1. current and tides 3.2. proximity to hook-ups 3.3. proximity of other vessels 3.4. excessive by-catch 3.5. swimming speed of target species 3.6. length of towing ground 3.7. symmetry of gear when shooting and hauling.
5. Monitored:	<ul style="list-style-type: none"> 5.1. vertical and horizontal sweep angle 5.2. ground contact 5.3. net hauling speed and direction 5.4. visual and electronic position fixing methods 5.5. using electronic detection equipment such as lights

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidences that the candidate :</p> <ul style="list-style-type: none"> 1.1. maintained, adjusted and positioned the vessel and gear during deployment, fishing and retrieval of beach seines, mesh nets or gill nets in order to optimize the catch 1.2. kept all members of a team working efficiently and safely 1.3. described and identified the indicators of sub-optimal performance 1.4. made adjustments to all aspects of beach seining or gill netting gear to optimize performance 1.5. manoeuvred a vessel which is deploying beach seining or gill netting gear along a predetermined route 1.6. determined ground suitable for beach seining or gill net targets in response to information from various sources. <p>Assessment must confirm knowledge of:</p> <ul style="list-style-type: none"> 1.7. factors that indicate and determine beach seining or gill netting operating efficiency.
<p>2. Underpinning Knowledge and Attitudes</p>	<p>The essential knowledge and understanding a person needs to adjust and position beach seines, mesh nets or gill nets to the required standard include:</p> <ul style="list-style-type: none"> 2.1. factors that determine optimal gear performance such as: <ul style="list-style-type: none"> mesh size, net material, hanging ratio over and under spreading satisfactory ground contact gear symmetry headline height 2.2. ballast and flotation 2.3. indicators of sub-optimal performance 2.4. fish behaviour characteristics.

3. Underpinning Skills	<p>The essential skills a person needs to adjust and position beach seines, mesh nets or gill nets to the required standard include:</p> <ul style="list-style-type: none"> 2.1. adjusting gear components to improve performance 2.2. using and repairing netting gear 2.3. monitoring the nature and position of benthic features and potential catches from echo sounder data 2.4. adjusting the speed and direction of the vessel to ensure the net will attain a position determined by the fishing strategy 2.5. using small vessels. <p>Literacy skills used for:</p> <ul style="list-style-type: none"> 2.6. interpreting gear plans 2.7. reading operating instructions for electronic detection equipment 2.8. reading tide tables. 2.9. Numeracy skills used for: 2.10. reading and recording data obtained from electronic detection equipment.
4. Resource Implication	<p>Resources may include:</p> <ul style="list-style-type: none"> 4.1. operational beach seining or gill netting vessel with access to stocks of appropriate target species.
5. Methods of Assessment	<p>Competency should be assessed:</p> <ul style="list-style-type: none"> 5.1. Through direct observation / demonstration 5.2. Portfolio
6. Context of Assessment	<ul style="list-style-type: none"> 6.1. Assessment should be in a workplace. 6.2. Demonstration of competency over time and on a number of occasions.

UNIT OF COMPETENCY: MAINTAIN, PREPARE, DEPLOY AND RETRIEVE
MESH NETS OR GILL NETS TO LAND CATCH

UNIT CODE: AGR642312

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to maintain and prepare gill netting gear ready for deployment, and retrieve the gear to the vessel. The unit also involves the initial aspects of handling seafood specific to beach seining or gill netting operations. Repairing damaged netting is covered in "Assemble and repair damaged netting". Beach seines, mesh nets and gill nets are typically used in Municipal Fisheries.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Maintain beach seines, mesh nets or gill nets ready for deployment	<p>1.1 <i>Beach seines, mesh nets or gill nets</i> are <i>checked</i> against established <i>criteria</i> in accordance with the vessel maintenance plan and supervisor's instructions.</p> <p>1.2 Beach seine, mesh net or gill net <i>components</i> which are worn or damaged and lack security or symmetry are identified and either <i>reconditioned</i> or replaced.</p> <p>1.3 Replacement beach seine, mesh net or gill net components are ordered according to enterprise procedures.</p> <p>1.4 Defective beach seine, mesh net or gill net components are disposed of according to environmental protection <i>regulations</i> and enterprise procedures.</p>

<p>2. Deploy beach seines, mesh nets or gill nets to ensure operating efficiency, low environmental impact and minimal interaction with by-catch</p>	<p>2.1 Beach seine, mesh net or gill net components are connected in the configuration required by the fishing method according to instructions from a supervisor.</p> <p>2.2 Deployment of beach seines, mesh nets or gill nets from the vessel is carried out according to instructions from supervisor and vessel operating and safety procedures.</p> <p>2.3 Beach seines, mesh nets or gill nets are deployed to ensure they are not twisted and are in a pattern required by the fishing operation.</p> <p>2.4 Devices and systems are deployed to reduce environmental impact and interaction with by-catch.</p> <p>2.5 Beach seine, mesh net or gill net storage area is cleaned according to hygiene requirements and vessel operating procedures.</p>
<p>3. Retrieve the beach seine, mesh net or gill net</p>	<p>3.1 Beach seines, mesh nets or gill nets are applied to winches or haulers and are retrieved to maximize catch in accordance with vessel operating procedure.</p> <p>3.2 Catch is landed and removed from beach seines, mesh nets or gill nets to maximize seafood quality.</p> <p>3.3 Beach seines, mesh nets or gill nets are disconnected and stowed to ensure ease of deployment, the safety of crew and a safe working area.</p>

<p>4. Land, contain and sort the catch</p>	<p>4.1 Containment devices are prepared to receive the catch according to hygiene requirements and vessel operating procedures.</p> <p>4.2 Catch is loaded into containment devices according to vessel hygiene, safety and operating procedures.</p> <p>4.3 Catch is sorted to maximize by-catch survival and seafood quality according to vessel operating procedures and fisheries regulations.</p>
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Beach seines, mesh nets or gill nets:	1.1. beach seines 1.2. gill nets for: coastal species 1.2.1. estuarine species.
2. Checked:	2.1. symmetry of: sweeps bridles head ropes foot ropes 2.2. rips, holes and worn netting 2.3. security of hangings for net and lashings for ground gear and flotation 2.4. by-catch reduction devices 2.5. connecting devices for wear.
3. Criteria:	3.1. looseness 3.2. absence 3.3. cracks 3.4. wear limit 3.5. distortion 3.6. internal and external damage to rope.
4. Components:	4.1. sweeps and bridles 4.2. netting material 4.3. hangings 4.4. flotation devices 4.5. ballast 4.6. by-catch reduction devices 4.7. flags, buoys and droppers 4.8. connecting devices: knots 4.8.1. clips.
5. Reconditioned:	5.1. all components except for the netting material.
6. Regulations and requirements:	6.1. BFAR regulations and other ecologically sustainable development principles

	6.2. Municipal zoning regulations 6.3. occupational health and safety standards 6.4. enterprise procedures 6.5. hygiene requirements 6.6. environmental protection regulations 6.7. transport regulations and requirements.
7. Machinery:	7.1. net drums 7.2. capstans 7.3. line haulers 7.4. dinghies.
8. Used:	8.1. gear is guided on to machinery operated by other personnel 8.2. fishing gear is connected to the machinery 8.3. machinery is operated under supervision.
9. Containment devices:	9.1. brine tanks 9.2. sorting trays 9.3. fish boxes: wash boxes exchangeable market boxes.
10. Prepared:	10.1. disinfected 10.2. exchangeable market boxes are accounted for 10.3. boxes sufficient for sorting are arranged ergonomically 10.4. brine tank hatches arranged.
11. Sorted:	11.1. by commercial value / quality classification 11.2. by species 11.3. by sex 11.4. by size 11.5. by weight 11.6. by time of catch (FIFO) 11.7. as by-catch 11.8. as seafood for retention.

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidences that the candidate :</p> <ul style="list-style-type: none">1.1. maintained and prepared beach seining or gill netting gear ready for deployment, and to retrieve the gear to the vessel1.2. handled and sorted seafood with regard to food safety and hygiene, and food quality.1.3. prepared, deployed and retrieved common gear components1.4. lashed ground gear and/or flotation1.5. renewed damaged net hangings1.6. repaired all aspects of the gear, except damaged netting1.7. sorted and contained the catch. <p>Assessment must confirm knowledge of:</p> <ul style="list-style-type: none">1.8. criteria for assessing the quality of gear components1.9. order in which gear components are connected and disconnected1.10. principles of personal and vessel hygiene.
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<p>2. Underpinning Knowledge and Attitudes</p>	<p>The essential knowledge and understanding a person needs to maintain, prepare, deploy and retrieve beach seines, mesh nets or gill nets to the required standard include:</p> <ul style="list-style-type: none"> 2.1. factors that make components effective or defective 2.2. order in which gear components are connected and disconnected 2.3. basic operating principle of the fishing gear 2.4. principles that contribute to: personal, seafood and vessel hygiene environmental and resource protection workplace safety vessel stability.
<p>3. Underpinning Skills</p>	<p>The essential skills a person needs to maintain, prepare, deploy and retrieve beach seines, mesh nets or gill nets to the required standard include:</p> <ul style="list-style-type: none"> 3.1. repairing or replacing all worn gear components, excluding damage to netting material 3.2. assembling and dismantling connecting devices 3.3. ensuring gear is deployed untwisted 3.4. using machinery to deploy and retrieve fishing gear 3.5. stowing fishing gear 3.6. sorting catch. <p>Literacy skills used for:</p> <ul style="list-style-type: none"> 3.7. reading sizes of connecting gear. <p>Numeracy skills used for:</p> <ul style="list-style-type: none"> 3.8. measuring length or diameter.

4. Resource Implication	<p>Resources must include:</p> <p>4.1. fully operational vessel with beach seining or gill netting gear and catch suitable for sorting.</p> <p>4.2. enterprise procedures.</p>
5. Methods of Assessment	<p>Competency should be assessed:</p> <p>5.1. through direct observation / demonstration</p> <p>5.2. portfolio</p>
6. Context of Assessment	<p>6.1. Assessment should be in a workplace.</p> <p>6.2. Demonstration of competency over time and on a number of occasions.</p>

UNIT OF COMPETENCY: ADJUST AND POSITION HAND OPERATED LINES

UNIT CODE: AGR642313

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to maintain, adjust and position hand operated line fishing gear (such as that used for hand line fishing, trolling, squid jigging and rod and reel fishing) to optimize the catch. This unit assumes some level of familiarity with the gear and is appropriate to an experienced fisher.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Organize a work area to adjust hand operated lines	1.1 Unsafe and inefficient aspects of the work area are identified and rectified. 1.2 Work teams are given clear instructions about the task and the methods to be used. 1.3 Resources necessary for the completion of the task are made available when needed.
2. Adjust hand operated line components to optimize catch	2.1 Criteria for assessing the sub-optimal performance of hand operated lines are used to judge effectiveness. 2.2 Catches are observed to provide information on the effectiveness of hand operated lines and fishing operations. 2.3 Hand operated line components are adjusted, reconditioned or constructed to rectify sub-optimal gear performance.
3. Position hand operated lines to optimize catch	3.1 Fishing strategy is developed to incorporate all relevant factors . 3.2 Position of hand operated lines is monitored and altered with respect to catch concentrations and environmental and other characteristics of area of operation. 3.3 Vessel position during the deployment and retrieval of hand operated lines is monitored for the factors that contribute to a successful fishing strategy and altered as required.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Criteria:	1.1. species composition of catch 1.2. amount of catch per unit of effort 1.3. amount of catch in comparison with other vessels 1.4. determining and monitoring tolerance to: wear of gear components distortion of gear components 1.4.1. quality of by-catch reduction devices 1.5. absence or breakage of gear components 1.6. quality of bait.
2. Hand operated lines:	2.1. nylon monofilament line 2.2. other fishing line 2.3. weighted hand lines mounted on a: hand operated winch power operated winch hand reel 2.4. unweighted lines: rod and reel trolling gear 2.5. squid jigging machines.
3. Components:	3.1. rods 3.2. reels 3.3. hand lines 3.4. hooks, jigs or lures 3.5. sinkers 3.6. bait and burley 3.7. by-catch reduction devices.
4. Factors:	4.1. current 4.2. wind 4.3. tide 4.4. proximity to appropriate fishing ground: rock, sand, gravel or mud

	steepness or flatness bottom growth 4.5. water character: temperature and colour water mass or structures fish feeding group and bait species 4.6. estuary condition 4.7. proximity of other vessels 4.8. excessive by-catch 4.9. weather 4.10. moon phase 4.11. season.
5. Monitored:	5.1. vertical and horizontal line angle 5.2. line position in relation to target fishing site or depth 5.3. visual and electronic position fixing methods 5.4. using electronic detection equipment such as: echo sounder sonar water temperature measuring and positioning devices 5.5. position fixing equipment.

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidences that the candidate:</p> <ul style="list-style-type: none"> 1.1. maintained, adjusted and positioned the vessel and gear during deployment, fishing and retrieval of hand operated lines in order to optimize the catch 1.2. kept all members of a team working efficiently and safely 1.3. described and identified the indicators of sub-optimal performance 1.4. made adjustments to all aspects of hand operated line fishing gear to optimize performance 1.5. placed a line at a predetermined position in the presence of a moderate current 1.6. exhibited ability to determine productive grounds and water in response to information from various sources. <p>Assessment must confirm knowledge of:</p> <ul style="list-style-type: none"> 1.7. factors that indicate and determine hand operated line operating efficiency.
<p>2. Underpinning Knowledge and Attitudes</p>	<p>The essential knowledge and understanding a person needs to adjust and position hand operated lines to the required standard include:</p> <ul style="list-style-type: none"> 2.1. factors that determine optimal gear performance such as: <ul style="list-style-type: none"> gear dimensions and fishing depth hook type type and quality of bait and burley 2.2. indicators of sub-optimal performance 2.3. fish behaviour.

3. Underpinning Skills	<p>The essential skills a person needs to adjust and position hand operated lines to the required standard include:</p> <ul style="list-style-type: none"> 3.1. adjusting gear components to improve performance 3.2. using and repairing hand operated line fishing gear 3.3. monitoring the nature and position of benthic features and potential catches from echo sounder data. <p>Literacy skills used for:</p> <ul style="list-style-type: none"> 3.4. reading operating instructions for electronic detection equipment. <p>Numeracy skills used for:</p> <ul style="list-style-type: none"> 3.5. reading and recording data obtained from electronic detection equipment.
4. Resource Implication	<p>Resources must include:</p> <ul style="list-style-type: none"> 4.1. hand operated line fishing gear 4.2. operational hand line fishing vessel with access to stocks of appropriate target species.
5. Methods of Assessment	<p>Competency should be assessed:</p> <ul style="list-style-type: none"> 5.1. through direct observation / demonstration 5.2. portfolio
6. Context of Assessment	<ul style="list-style-type: none"> 6.1. Assessment should be in a workplace. 6.2. Demonstration of competency over time and on a number of occasions.

UNIT OF COMPETENCY: MAINTAIN, PREPARE, DEPLOY AND RETRIEVE
HAND OPERATED LINES TO LAND CATCH

UNIT CODE: AGR642314

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to maintain and prepare line fishing gear (such as that used for hand line fishing, trolling, squid jigging and rod and reel fishing) ready for deployment, and retrieving the gear to the vessel. The unit also involves the initial aspects of handling seafood specific to line fishing operations.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Maintain hand operated lines ready for deployment	<p>1.1 <i>Hand operated lines</i> are <i>checked</i> against established <i>criteria</i> in accordance with the vessel maintenance plan or instructions provided by a supervisor.</p> <p>1.2 Hand operated line <i>components</i> which are worn, loose or blunt are identified and either <i>reconditioned</i> or replaced.</p> <p>1.3 Replacement hand operated line components are ordered according to enterprise procedures.</p> <p>1.4 Defective hand operated line components are disposed of according to environmental protection <i>regulations</i> and enterprise procedures.</p>

<p>2. Deploy hand operated lines to ensure operating efficiency, low environmental impact and minimal interaction with by-catch</p>	<p>2.1 Hand operated line components are connected in the configuration required by the fishing method according to instructions from a supervisor.</p> <p>2.2 Equipment used to deploy hand operated lines from the vessel is operated according to instructions from supervisors and vessel operating and safety procedures.</p> <p>2.3 Hand operated lines are deployed to ensure they are in close proximity to and attract potential catches.</p> <p>2.4 Devices and systems are deployed to reduce environmental impact and interaction with by-catch.</p> <p>2.5 Hand operated line storage area is cleaned according to hygiene requirements and vessel operating procedures.</p>
<p>3. Retrieve hand operated lines</p>	<p>3.1 Equipment used to retrieve the catch to the vessel is operated according to instructions from supervisors and vessel operating and safety procedures.</p> <p>3.2 Lines are guided on to equipment and are manipulated to ensure catch is retained.</p> <p>3.3 Traces and line ends are handled and catch landed in accordance with instructions from supervisors to maximize seafood quality.</p> <p>3.4 Hand operated lines are disconnected and stowed to ensure ease of deployment, the safety of crew and a safe working area.</p> <p>3.5 Equipment is washed to minimize the impact of corrosion.</p>
<p>4. Land, contain and sort the catch</p>	<p>4.1 Containment devices are prepared to receive the catch according to hygiene requirements and vessel operating procedures.</p> <p>4.2 Catch is loaded into containment devices according to vessel hygiene, safety and operating procedures.</p> <p>4.3 Catch is sorted to maximize by-catch survival and seafood quality according to vessel operating procedures.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Hand operated lines:	1.1. nylon monofilament line 1.2. other fishing lines 1.3. weighted lines mounted on a: hand operated winch power operated winch hand reel 1.4. unweighted lines: rod and reel trolling gear 1.4.1. squid jigging machines and lines.
2. Checked:	2.1. broken, blunt or bent components 2.2. security of connecting devices, knots and lashings 2.3. by-catch reduction devices 2.4. lines for wear.
3. Criteria:	3.1. looseness 3.2. sharpness of hooks 3.3. absence 3.4. cracks 3.5. wear limit 3.6. distortion 3.7. external damage to line.
4. Components:	4.1. rods 4.2. reels 4.3. hand lines 4.4. hooks, jigs or lures 4.5. sinkers 4.6. bait and burley 4.7. by-catch reduction devices.

5. Reconditioned:	5.1. line re-tied 5.2. lines are coiled and uncoiled as required 5.3. connections re-tied or re-collared 5.4. clips straightened 5.5. hooks sharpened 5.6. bait replaced 5.7. rods and reels washed, maintained and repaired.
6. Regulations and requirements:	6.1. BFAR regulations and other ecologically sustainable development principles 6.2. Municipal zoning regulations 6.3. occupational health and safety standards 6.4. enterprise procedures 6.5. vessel operating procedures 6.6. lifting guidelines 6.7. hygiene requirements 6.8. environmental protection regulations 6.9. fisheries regulations 6.10. transport regulations and requirements.
7. Equipment:	7.1. deploying devices: rod and reel hand operated winch power operated winch squid jigging machines outrigger poles 7.2. retrieval devices: retrieval lines rod and reel hand operated winch power operated winch squid jigging machines gaff product compatible gloves glove assisted landing technique

	play lines 7.2.1. dinghies.
8. Used:	8.1. gear is guided on to equipment operated by other personnel 8.2. fishing gear is connected to the equipment 8.3. equipment is operated under supervision 8.4. advice on the use of the equipment is offered.
9. Containment devices:	9.1. brine tanks: kill tanks ice slurry 9.1.1. ice compartments 9.1.2. fish handling and sorting areas 9.2. fish boxes: wash boxes exchangeable market boxes freezing cartons
10. Prepared:	10.1. cleaned 10.2. disinfected 10.3. freezing cartons assembled 10.4. freezer carton liners applied 10.5. exchangeable market boxes are accounted for 10.5.1. boxes sufficient for sorting are arranged ergonomically 10.5.2. brine tank hatches arranged.
11. Sorted:	11.1. by species 11.2. by legal length 11.3. by size 11.4. by sex: male or female sexual stage 11.5. as by-catch 11.6. as seafood for retention.

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidences that the candidate:</p> <ul style="list-style-type: none"> 1.1. maintained and prepared line fishing gear (such as that used for hand line fishing, trolling, squid jigging and rod and reel fishing) ready for deployment, and to retrieve the gear to a commercial fishing vessel 1.2. handled and sorted seafood with regard to food safety and hygiene, and food quality. 1.3. prepared, deployed and retrieved common gear components 1.4. renewed and repaired damaged gear components 1.5. sorted and contained the catch. <p>Assessment must confirm knowledge of:</p> <ul style="list-style-type: none"> 1.6. criteria for assessing the quality of hand operated line fishing gear components 1.7. the order in which hand operated line fishing gear components are connected and disconnected 1.8. principles of personal and vessel hygiene.
<p>2. Underpinning Knowledge and Attitudes</p>	<p>The essential knowledge and understanding a person needs to maintain, prepare, deploy and retrieve hand operated lines to the required standard include:</p> <ul style="list-style-type: none"> 2.1. factors that make components effective or defective 2.2. order in which gear components are connected and disconnected 2.3. basic operating principle of hand operated line fishing gear 2.4. principles that contribute to: 2.5. personal, seafood and vessel hygiene 2.6. environmental and resource protection 2.7. workplace safety

	<p>2.8. vessel stability</p> <p>2.8.1.1. benefits of ice slurry.</p>
3. Underpinning Skills	<p>The essential skills a person needs to maintain, prepare, deploy and retrieve hand operated lines to the required standard include:</p> <ul style="list-style-type: none"> 3.1. repairing or replacing all worn hand operated line fishing gear components 3.2. assembling and dismantling connecting devices 3.3. coiling and uncoiling lines 3.4. ensuring gear is deployed untwisted 3.5. using equipment to deploy and retrieve hand operated line fishing 3.6. stowing hand operated line fishing gear 3.7. sorting catch 3.8. operating small vessels. <p>Literacy skills used for:</p> <ul style="list-style-type: none"> 3.9. reading different line strengths. <p>Numeracy skills used for:</p> <ul style="list-style-type: none"> 3.10. measuring length or diameter.
4. Resource Implication	<p>Resources must include:</p> <ul style="list-style-type: none"> 4.1. fully operational hand operated line fishing vessel with catch suitable for sorting.
5. Methods of Assessment	<p>Competency should be assessed:</p> <ul style="list-style-type: none"> 5.1. Through direct observation / demonstration 5.2. Portfolio
6. Context of Assessment	<ul style="list-style-type: none"> 6.1. Assessment should be in a workplace. 6.2. Demonstration of competency over time and on a number of occasions.

UNIT OF COMPETENCY: ADJUST AND POSITION POTS AND TRAPS

UNIT CODE: AGR642315

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to maintain, adjust and position pots and traps to optimize the catch. This unit assumes some level of familiarity with the gear and is appropriate to an experienced fisher. This fishing gear is typically used in Municipal Fisheries.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Organize a work area to adjust traps and pots	1.1 Unsafe and inefficient aspects of the work area are identified and rectified. 1.2 Work teams are given clear instructions about the task and the methods to be used. 1.3 Resources necessary for the completion of the task are made available when needed. 1.4 Tools for maintaining traps and pots are obtained appropriate for intended use.
2. Adjust trap and pot components to optimize catch	2.1 Criteria for assessing sub-optimal trap and pot performance are used to judge effectiveness. 2.2 Observations of traps and pots are made to provide data on performance. 2.3 Trap and pot components are adjusted, reconditioned or constructed to rectify sub-optimal gear performance.
3. Position traps and pots to optimize catch	3.1 Fishing strategy is developed to incorporate all relevant factors . 3.2 Position of traps and pots is monitored and altered to optimize catch in accordance with the fishing strategy. 3.3 Sea factors are monitored for effect on position of vessel. 3.4 Optimum position of vessel is maintained during trap and pot deployment.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Traps and pots:	1.1. lobster pots 1.2. fish traps 1.3. octopus traps 1.4. other.
2. Criteria:	2.1. species composition of catch 2.2. amount of catch per unit of effort 2.3. amount of catch in comparison with other vessels 2.4. determining and monitoring tolerance to: holes in gear material wear of gear components distortion of gear components 2.4.1. quality of by-catch reduction devices 2.4.2. absence or breakage of gear components.
3. Components:	3.1. flag poles 3.2. dan buoys with: lights RADAR reflectors radio transponders 3.2.1. floats 3.3. lines 3.4. bridles, toggles and lashings 3.5. ballast 3.6. bait and bait holding devices 3.7. pot or trap material and frame 3.8. by-catch reduction devices.
4. Factors:	4.1. depth 4.2. wind 4.3. tide 4.4. current

	<p>4.5. proximity to appropriate fishing ground: rock, sand, gravel or mud steepness or flatness bottom growth bait species 4.5.1. proximity of other vessels</p> <p>4.6. excessive by-catch</p> <p>4.7. predators and other disturbances.</p>
5. Monitored:	<p>5.1. vertical and horizontal pot or trap rope angle</p> <p>5.2. pot or trap position in relation to target fishing site</p> <p>5.3. visual and electronic position fixing methods</p> <p>5.4. using electronic detection equipment such as: echo sounder 5.4.1. sonar.</p>

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidences that the candidate :</p> <ul style="list-style-type: none"> 1.1. maintained, adjusted and positioned the vessel and gear during deployment, fishing and retrieval of pots and traps in order to optimize the catch 1.2. kept all members of a team working efficiently and safely 1.3. described and identified the indicators of sub-optimal performance 1.4. made adjustments to all aspects of potting or trapping gear to optimize performance 1.5. manoeuvred a pot or trap to a predetermined bottom position in the presence of moderate current 1.6. determined productive ground in response to information from various sources. <p>Assessment must confirm knowledge of:</p> <ul style="list-style-type: none"> 1.7. factors that indicate and determine pot or trap operating efficiency.
<p>2. Underpinning Knowledge and Attitudes</p>	<p>The essential knowledge and understanding a person needs to adjust and position pots and traps to the required standard include:</p> <ul style="list-style-type: none"> 2.1. factors that determine optimal gear performance such as: <ul style="list-style-type: none"> satisfactory ground contact bait pot or trap covering material pot or trap construction 2.2. indicators of sub-optimal performance 2.3. fish behaviour.
<p>3. Underpinning Skills</p>	<p>The essential skills a person needs to adjust and position pots and traps to the required standard include:</p> <ul style="list-style-type: none"> 3.1. adjusting gear components to improve performance

	<p>3.2. using and repairing potting or trapping gear</p> <p>3.3. monitoring the nature and position of benthic features and potential catches from echo sounder data.</p> <p>Literacy skills used for:</p> <p>3.4. reading operating instructions for electronic detection equipment.</p> <p>Numeracy skills used for:</p> <p>3.5. reading and recording data obtained from electronic detection equipment.</p>
4. Resource Implication	<p>Resources may include:</p> <p>4.1. operational potting or trapping vessel with access to stocks of appropriate target species.</p>
5. Methods of Assessment	<p>Competency should be assessed:</p> <p>5.1. through direct observation / demonstration</p> <p>5.2. portfolio</p>
6. Context of Assessment	<p>6.1. Assessment should be in a workplace.</p> <p>6.2. Demonstration of competency over time and on a number of occasions.</p>

UNIT OF COMPETENCY: MAINTAIN, PREPARE, DEPLOY AND RETRIEVE POTS AND TRAPS TO LAND CATCH

UNIT CODE: AGR642316

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to maintain and prepare potting and trapping gear ready for deployment, and retrieving the gear to the vessel. The unit also involves the initial aspects of seafood handling specific to potting and trapping operations. Potting and trapping are typically carried out in Municipal Fisheries.

ELEMENT	PERFORMANCE CRITERIA <i>Italicised Bold</i> terms are elaborated in the Range of Variables
1. Maintain traps and pots ready for deployment	<p>1.1 Traps and pots are checked against established criteria in accordance with the vessel maintenance plan or instructions provided by a supervisor.</p> <p>1.2 Trap and pot components which are defective, worn or loose are identified and either reconditioned or replaced.</p> <p>1.3 Replacement gear components are ordered according to enterprise procedures.</p> <p>1.4 Defective trap and pot components are disposed of according to environmental protection regulations and enterprise procedures.</p>
2. Deploy traps and pots to ensure operating efficiency, low environmental impact and minimal interaction with by-catch	<p>2.1 Trap and pot components are prepared and gathered ready for deployment.</p> <p>2.2 Trap and pot components are connected in the configuration required by the fishing method according to instructions from a supervisor.</p> <p>2.3 Traps and pots are moved in accordance with vessel operating procedures, lifting guidelines and deck team work procedures.</p> <p>2.4 Traps and pots are deployed to ensure lines are not fouled and trap or pot orientation is correct.</p>

	<p>2.5 Devices and systems are deployed to reduce environmental impact and interaction with by-catch.</p> <p>2.6 Trap and pot storage area and devices are cleaned and stowed according to hygiene requirements and vessel operating procedures.</p>
3. Retrieve traps and pots	<p>3.1 Floats and dan poles are retrieved according to vessel operating procedures.</p> <p>3.2 Ropes are applied to hauling devices and are loaded into baskets for stowing in accordance with supervisor's instructions.</p> <p>3.3 Catch is extracted from traps and pots in accordance with instructions from supervisor and to maximize seafood quality.</p> <p>3.4 Traps and pots are disconnected and stowed to ensure ease of deployment, the safety of crew and a safe working area.</p>
4. Land, contain and sort the catch	<p>4.1 Containment devices are prepared to receive the catch according to hygiene requirements and vessel operating procedures.</p> <p>4.2 Catch is loaded into containment devices according to vessel hygiene, safety and operating procedures.</p> <p>4.3 Catch is sorted to maximize by-catch survival and seafood quality according to vessel operating procedures and fisheries regulations.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Traps and pots:	1.1. lobster pots 1.2. crab pots 1.3. fish traps (grouper and other reef fish) 1.4. others.
2. Checked:	2.1. symmetry of bridles 2.2. broken or bent components 2.3. security of knots and lashings 2.4. by-catch reduction devices 2.5. ropes for wear.
3. Criteria:	3.1. looseness 3.2. absence 3.3. cracks 3.4. wear limit 3.5. distortion 3.6. internal and external damage to rope.
4. Components:	4.1. flag poles 4.2. floats 4.3. lines 4.4. bridles, toggles and lashings 4.5. ballast 4.6. bait and bait holding devices 4.7. pot or trap material and frame 4.1. by-catch reduction devices.
5. Reconditioned:	5.1. pot frames tightened 5.2. material stretched 5.3. ropes re-spliced and replaced, if necessary 5.4. bait replaced.
6. Regulations and requirements:	6.1. BFAR regulations and other ecologically sustainable development principles 6.2. Municipal zoning regulations

	6.3. occupational health and safety standards 6.4. enterprise procedures 6.5. vessel operating procedures 6.6. hygiene requirements 6.7. environmental protection regulations 6.8. fisheries regulations 6.9. transport regulations and requirements.
7. Containment devices:	7.1. sorting areas
8. Boxes	8.1. boxes: 8.1.1. wash boxes 8.1.2. exchangeable market boxes.
9. Prepared:	9.1. cleaned 9.2. disinfected 9.3. exchangeable market boxes are accounted for 9.4. boxes sufficient for sorting are arranged ergonomically.
10. Sorted:	10.1. by commercial value / quality classification 10.2. by species / variety 10.3. by size 10.4. by sex 10.5. by time of catch (FIFO) 10.6. as by-catch.

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidences that the candidate :</p> <ul style="list-style-type: none"> 1.1. Maintained and prepared potting and trapping gear ready for deployment, and to retrieve the gear to the vessel 1.2. handled and sorted seafood with regard to food safety and hygiene, and food quality. 1.3. prepared, deployed and retrieved the common trap and pot gear components listed in the range of variables 1.4. renewed and repaired damaged gear components 1.5. sorted and contained the catch. <p>Assessment must confirm knowledge of:</p> <ul style="list-style-type: none"> 1.6. criteria for assessing the quality of trap and pot gear components 1.7. order in which gear components are connected and disconnected 1.8. principles of personal and vessel hygiene.
<p>2. Underpinning Knowledge and Attitudes</p>	<p>The essential knowledge and understanding a person needs to maintain, prepare, deploy and retrieve pots and traps to the required standard include:</p> <ul style="list-style-type: none"> 2.1. factors that make trap and pot components effective or defective 2.2. order in which trap and pot fishing gear components are connected and disconnected 2.3. basic operating principle of the fishing gear 2.4. principles that contribute to: <ul style="list-style-type: none"> personal, seafood and vessel hygiene environmental and resource protection workplace safety vessel stability.

3. Underpinning Skills	<p>The essential skills a person needs to maintain, prepare, deploy and retrieve pots and traps to the required standard include:</p> <ul style="list-style-type: none"> 3.1. repairing or replacing all worn gear components 3.2. assembling and dismantling connecting devices 3.3. ensuring gear is deployed untwisted 3.4. using machinery to deploy and retrieve trap and pot fishing gear 3.5. stowing fishing gear 3.6. sorting catch. <p>Literacy skills used for:</p> <ul style="list-style-type: none"> 3.7. reading sizes of connecting gear. <p>Numeracy skills used for:</p> <ul style="list-style-type: none"> 3.8. measuring length or diameter.
4. Resource Implication	<p>Resources must include:</p> <ul style="list-style-type: none"> 4.1. fully operational potting or trapping vessel with catch suitable for sorting. 4.2. enterprise procedures.
5. Methods of Assessment	<p>Competency should be assessed:</p> <ul style="list-style-type: none"> 5.1. Through direct observation / demonstration 5.2. Portfolio.
6. Context of Assessment	<ul style="list-style-type: none"> 6.1. Assessment should be in a workplace. 6.2. Demonstration of competency over time and on a number of occasions.