



Australian Government

Department of Education, Employment and Workplace Relations

SFIFISH310A Adjust and position fishing gear

Release: 1

SFIFISH310A Adjust and position fishing gear

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency involves interpreting gear plans and adjusting fishing gear before deployment. The unit also involves maintaining, adjusting and positioning the vessel and gear during deployment, fishing and retrieval in order to optimise the catch. This unit assumes some level of familiarity with the gear and is appropriate to an experienced fisher. Licensing, legislative, regulatory or certification requirements may apply to this unit. Therefore it will be necessary to check with the relevant state or territory regulators for current licensing, legislative or regulatory requirements before undertaking this unit.
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Application of the Unit

Application of the unit	This unit has application to fishing operations using a range of methods: • beach seines, mesh nets and gill nets • demersal fish and prawn trawls • drop lines and longlines • hand operated lines • pots and traps • purse seines. It includes the use of traditional fishing methods, tools and equipment. All enterprise or workplace procedures and activities are carried out according to relevant government regulations, licensing and other compliance requirements, including occupational health and safety (OHS) guidelines, food safety and hygiene regulations and procedures and ecologically sustainable development (ESD) principles. Equipment operation, maintenance, repairs and calibrations are undertaken in a safe manner that conforms to manufacturer instructions. Appropriate personal protective equipment (PPE) is selected, checked, used and maintained.
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Organise work area to adjust fishing gear	1.1. Appropriate fishing gear and related equipment are selected. 1.2. Unsafe and inefficient aspects of the work area are identified and rectified. 1.3. Work teams are given clear instructions about the task and methods to be used. 1.4. Resources necessary for the completion of the task are made available when needed. 1.5. Tools, equipment and techniques devised for maintaining and readying fishing devices for deployment are appropriate for planned operations.
2. Adjust components of fishing gear to optimise catch	2.1. Criteria for assessing sub-optimal fishing gear performance are used to judge effectiveness. 2.2. Observations are made on catch and fishing device components to provide data on position, symmetry and performance. 2.3. Effectiveness of deployment of fishing device components is assessed by comparing catches and observed operation of components with gear plans. 2.4. Fishing device components are adjusted, reconditioned or constructed to rectify sub-optimal gear performance.
3. Position fishing gear to optimise catch	3.1. Fishing strategy is developed to incorporate all relevant factors. 3.2. Position, concentration and movement of the target species and environmental and other characteristics of area of operation are monitored by visual and electronic means. 3.3. Positions of vessel and fishing device during deployment and retrieval is monitored and adjusted, as required, to optimise catch and avoid hazards. 3.4. Fishing device movement is anticipated and its position is altered to maintain desired position by changing vessel course and speed. 3.5. Catches are analysed to determine effectiveness and performance of fishing device.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- adjusting gear components to improve performance
- adjusting the speed and direction of the vessel to ensure the fishing device will attain a position determined by the fishing strategy
- monitoring the nature and position of benthic features and potential catches from echo sounder data
- using and repairing fishing gear
- using small vessels (e.g. beach seines, mesh nets or gill nets).

Literacy skills used for:

- interpreting gear plans
- reading and recording data obtained from electronic detection equipment
- reading tide tables.

Numeracy skills used for:

- estimating the time taken for the fishing gear to reach a feature identified by the echo sounder on the vessel
- reading and recording data obtained from electronic detection equipment.

Required knowledge

- factors that determine optimal gear performance for beach seines, mesh nets or gill nets:
 - ballast and floatation
 - gear symmetry
 - headline height
 - mesh size, net material and hanging ratio
 - over- and under-spreading
 - satisfactory ground contact
- factors that determine optimal gear performance for hand operated line, drop line and longline fishing gear:
 - gear dimensions and fishing depth
 - hook type
 - sequence, type and quality of bait and burley
- factors that determine optimal gear performance for pots and traps:
 - bait
 - pot or trap construction

REQUIRED SKILLS AND KNOWLEDGE

- pot or trap covering material
- satisfactory ground contact
- factors that determine optimal gear performance for demersal fish and prawn trawls:
 - gear symmetry
 - headline height
 - otter board operating efficiency
 - over and under-spreading
 - satisfactory ground contact
- fish behaviour
- indicators of sub-optimal performance.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment evidence required to demonstrate competence in this unit

Assessment must confirm the ability to:

- identify indicators of sub-optimal performance
- identify viable stocks or determine productive grounds and water in response to information from various sources
- keep all members of a team working efficiently and safely
- maintain, adjust and position the vessel and gear during deployment, fishing and retrieval of components in order to optimise the catch
- make adjustments to all aspects of fishing gear to optimise performance, if appropriate:
 - manoeuvre a vessel which is towing trawl gear along a predetermined route
 - manoeuvre a vessel which is deploying purse seine, beach seining or gill netting gear along a predetermined route
 - place a line at a predetermined position in the presence of a moderate current.

Assessment must confirm knowledge of:

- factors that indicate and determine fishing device operating efficiency, including for trawls:
 - over and under-spreading, satisfactory ground contact, gear symmetry and headline height.

Context of and specific resources for assessment

Assessment is to be conducted at the workplace or in a simulated work environment.

Resources may include:

- operational vessel with access to stocks of appropriate target species
- fishing gear and associated equipment.

EVIDENCE GUIDE**Method of assessment**

The following assessment methods are suggested:

- observation of practical demonstration
- practical exercises
- project work
- written or oral short-answer testing.

Guidance information for assessment

This unit may be assessed holistically with other units within a qualification.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant government regulations, licensing and other compliance requirements may include:

- biodiversity and genetically modified organisms
- biosecurity, translocation and quarantine
- Australian Quarantine Inspection Service (AQIS) and other import requirements
- business or workplace operations, policies and practices
- ESD principles, environmental hazard identification, risk assessment and control
- fisheries or aquaculture regulations, permits and licences
- health and welfare of aquatic animals
- maritime and occupational diving operations, safety at sea and pollution control
- OHS hazard identification, risk assessment and control.

OHS guidelines may include:

- appropriate workplace provision of first aid kits and fire extinguishers
- clean, uncluttered, hygienic workplace
- codes of practice, regulations and/or guidance notes which may apply in a jurisdiction or

RANGE STATEMENT	
	industry sector • enterprise-specific OHS procedures, policies or standards • hazard and risk assessment of workplace, maintenance activities and control measures • induction or training of staff, contractors and visitors in relevant OHS procedures and/or requirements to allow them to carry out their duties in a safe manner • OHS training register • safe lifting, carrying and handling techniques, including manual handling, and the handling and storage of hazardous substances • safe systems and procedures for outdoor work, including protection from solar radiation, fall protection, confined space entry and the protection of people in the workplace • systems and procedures for the safe maintenance of property, machinery and equipment, including hydraulics and exposed moving parts • the appropriate use, maintenance and storage of PPE.
ESD principles may include:	• applying animal welfare ethics and procedures • controlling effluents, chemical residues, contaminants, wastes and pollution • improving energy efficiency • increasing use of renewable, recyclable and recoverable resources • maintaining biodiversity by sustainable fisheries or broodstock/seedstock collection • minimising noise, dust, light or odour emissions • reducing emissions of greenhouse gases • reducing energy use • reducing use of non-renewable resources • reducing interactions with native and protected flora and fauna, marine or land parks or areas • reducing live cultured or held organisms from escaping into environment • undertaking environmental hazard identification, risk assessment and control • undertaking facility quarantine, biosecurity and

RANGE STATEMENT	
	- translocation of livestock and genetic material - using and recycling of water, and maintaining water quality.
PPE may include:	- buoyancy vest or personal floatation device (PFD) - gloves, mitts or gauntlets, and protective hand and arm covering - hard hat or protective head covering - hearing protection (e.g. ear plugs and ear muffs) - insulated protective clothing for freezers or chillers and refrigeration units - non-slip and waterproof boots (gumboots) or other safety footwear - personal locator beacon or Emergency Position Indicating Radio Beacon (EPIRB) - protective eyewear, glasses and face mask - protective hair, beard and boot covers - protective outdoor clothing for tropical conditions - respirator or face mask - safety harness - sun protection (e.g. sun hat, sunscreen and sunglasses) - uniforms, overalls or protective clothing (e.g. mesh and waterproof aprons) - waterproof clothing (e.g. wet weather gear and waders).
Fishing gear may include:	beach seines, mesh nets and gill nets demersal fish and prawn trawls drop line and longline fishing gear hand operated line fishing gear, such as that used for handline fishing, trolling, squid jigging and rod and reel fishing pots and traps purse seines traditional fishing methods, tools and equipment.
Beach seines, mesh nets or gill nets may include:	- components: - connecting gear, such as knots, clips - ballast

RANGE STATEMENT	
	• by-catch reduction gear • flags, buoys and droppers • floatation gear • gear control and monitoring equipment • hangings • netting material • sweeps and bridles • dinghies • gill nets for: • estuarine species • sharks.
<i>Demersal fish and prawn trawls</i> may include:	• components: • beam trawls • warps: • otter boards, such as towing brackets and back strops • sweeps and bridles • netting material • hangings • floatation gear • ground gear • by-catch reduction gear • lifting gear • cod-end closures (e.g. chain knot on fish trawls, drawstring knot on prawn trawls, zipper, hangman's knot and Dutch clip): • connecting gear (e.g. shackles, hammerlocks, chain, wires, ropes, Clevis pin connectors, G, C, D and sister clips) • prawn trawls: • banana prawn-type gear • tiger prawn-type gear.
<i>Drop lines and longlines</i> may include:	• bottom set longlines • components: • bait • ballast • branch lines or snoods • by-catch reduction gear

RANGE STATEMENT	
	• connecting gear • detection gear (e.g. flag poles, lights, RADAR reflectors and radio transponders) • floats • hooks • main lines • retrieval gear • monofilament gear • rope gear • surface longlines: • tuna • other species • trot lines.
<i>Hand operated lines</i> may include:	• components: • bait and burley • by-catch reduction gear • hand lines • hooks, jigs or lures • reels • rods • sinkers • nylon monofilament line • other fishing line • squid jigging machines • weighted hand lines mounted on a: • hand operated winch • hand reel • power operated winch • unweighted lines: • rod and reel • trolling gear.
<i>Pots and traps</i> may include:	• bait and bait holding gear • ballast • bridles, toggles and lashings • by-catch reduction gear • components: • flag poles • dan buoys with lights, RADAR reflectors or

RANGE STATEMENT	
	- radio transponders - floats - lines - pot or trap material and frame - crayfish pots - fish traps - octopus traps
<i>Purse seines</i> may include:	- purse seines for catching: - bait - pilchards - salmon - tuna - components: - connecting gear (e.g. shackles, hammerlocks, chain, wires, ropes, Clevis pin connectors, G, C, D and sister clips) - floatation devices - ground gear - hangings and lashings - lifting gear - net skiff - overshoot rope and bridles, and heaving lines - purse rings or clips - purse rope - wire clamps.
<i>Traditional fishing methods, tools or equipment</i> may include:	- baited woven fishing lines with bone or metal hooks - collection by hand - constructed/manipulated water bodies for aquaculture - free diving - harpoons or spears - modern equipment (e.g. powered vessels) can also be used to overcome OHS, animal welfare and other hazards - stick or brush hide traps - wooden rafts or canoes - wooden stick or rock fish traps - woven nets, pots or traps.

RANGE STATEMENT	
Criteria may include:	• absence or breakage of gear components • amount of catch per unit of effort • amount of catch in comparison with other vessels • ease of deployment and retrieval • for beach seines and gill nets: • symmetry of sweeps, head ropes or foot ropes • for demersal fish and prawn trawls: • amount of debris in the net • asymmetry between nets or each side of a net • degree and character of polish on boards, sweep and ground gear • the symmetry of: • bridles • foot ropes • ground gear • head ropes • sweeps • warps • for purse seines: • shape of: • bridles • head ropes • foot ropes • pursing gear • for traps and pots, hand operated line fishing gear: • determining and monitoring tolerance to distortion of gear components, holes in gear material, and wear of gear components • quality of by-catch reduction gear and lifting gear • species composition of catch.
Factors may include:	• depth • estuary condition • excessive by-catch • length of towing ground • moon phase

RANGE STATEMENT	
	• predators and other disturbances • proximity to appropriate fishing ground: • bait species • bottom growth • rock, sand, gravel or mud • steepness or flatness • proximity to hook-ups • proximity of other vessels • tides and current • season • swimming speed of target species • symmetry of vessel to gear when shooting, towing and hauling • water character: • fish feeding group and bait species • temperature, structure, colour and clarity • water mass or structures • weather • wind.
Monitored may include:	• fish herding by 'splashing' • fishing device position in relation to target fishing site • ground contact • net hauling speed and direction • other vessels • time, distance and angle of gear to vessel • using electronic detection equipment, such as: • echo sounder • gear ranging equipment and displays • lights • net sonar or sounder • positioning systems • water temperature measuring and positioning device • vertical and horizontal dimensions of the gear • vertical and horizontal warp or rope angle • vessel towing speed and direction • visual and electronic position fixing methods.

Unit Sector(s)

Unit sector	Fishing operations
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Co-requisite units

Co-requisite units		

Competency field

Competency field	
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