National Occupational Standards for Marine Pilots

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Unit 1 Planning an act of pilotage

Unit Summary

A pilot will be expected to take on board the vessel a previously prepared Port Pilotage Plan (PPP). Each port may have its own basic PPP, to which must be added other relevant data. The pilot will therefore need to acquire up-to-date and relevant information before joining the vessel. On boarding the vessel, he may be made aware of additional factors, such as the vessel's handling characteristics. These may require the PPP to be amended.

The Master should have already prepared his own passage plan for the vessel. This plan will be augmented and amended by the PPP as necessary, so that a comprehensive passage plan is readily understood and agreed by all parties.

As the act of pilotage progresses, the passage plan may need to be reviewed and adjusted by the bridge team, which includes the pilot.

As much information as possible on the vessel to be piloted should be ascertained, including any comments by pilots who have previously piloted the vessel, reports from other ports, or the MCA.

This unit is in three parts, covering acquisition of data, PPP preparation and modifications to the plan.

Unit Structure

1 Planning an act of pilotage

- **1.1 Acquiring relevant data to facilitate the act of pilotage**
- **1.2 Preparing the port pilotage plan**
- **1.3 Re-assessing the plan and modifying as necessary**

Generic and local knowledge

The following areas of knowledge are essential for the **whole** of this unit and will need to be properly understood before a pilot can be considered fully competent:

Generic	G6	G7	G12	G14	G15	G16	G25	G26	G27	G29	G30
	G38	G39									
Local	L1	L3	L4	L5	L6	L7	L9	L10	L14	L15	L16
	L17	L18	L19	L20	L22	L23	L27	L28	L29	L30	

Element 1.1 Acquiring relevant data to facilitate the act of pilotage

Element summary

This element concerns the preparatory planning that will be required before embarkation. Relevant data needed to plan the act of pilotage and produce a Port Pilotage Plan will be acquired by the pilot from the resources available to him.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G1	G4	G5	G8	G13	G20	G28	G31	G32	G37	G40
Local	L8	L25	L26								

Performance Statements

The following standards must be achieved for a pilot to be considered competent in **acquiring relevant data to facilitate the act of pilotage:**

1 All relevant factual information regarding the vessel should be ascertained. This may include the vessel's name and type, dimensions, draught, trim, speed and cargo. Any special factors should also be taken into consideration.

2 Any defects or details affecting the vessel's condition should be ascertained.

3 An effort should be made to ascertain if the vessel has visited the port before. If so, records may need to be investigated to see if any previous problems occurred.

4 The latest tidal and hydrographic information should be obtained and a check made to ensure that the latest sounding charts are available. The information may include:

- tidal predictions for the duration of the passage, including any contingency
- variations in tide between predicted and actual
- strength and direction of tidal stream
- actual and predicted depths of water on passage and at the place of destination
- swell height and under-keel clearance
- excess fresh water
- dock and lock opening and closing times

5 The vessel's intentions and requirements should be ascertained. These may include:

- where and when pilot is embarking
- where vessel is bound for or departing from
- where pilotage is required from and to
- towage requirements
- pilot boarding system to be utilised and location for pilot boarding
- VHF channels to be used
- any specific vessel berthing requirements due to design or construction
- cargo handling requirements
- mooring boat and boatmen requirements

6 The forecast weather conditions likely to affect the passage should be ascertained, including visibility, wind direction, sea state and extreme weather factors that may affect the passage.

7 Any other factors affecting the passage and berth should be clarified. These may include:

- suitability and availability of assigned berth
- any recent changes at the berth
- river works
- air draught
- extant local navigation warnings
- other planned vessel movements
- availability of tugs
- breakdown, repair or maintenance of port equipment or facilities
- availability of mooring gang
- abort positions
- possible or planned anchorages and their availability
- lock and bridge programme
- anchorages and their availability

8 Advice should be sought if any relevant data is not available.

Element 1.2 Preparing the port pilotage plan

Element summary

This element concerns the preparation, development and production of an agreed plan, which the bridge team will use to enable the safe conduct of the vessel to its destination. The plan should contain appropriate levels of flexibility so that agreed modifications can be made during the passage if required, due to changed or unforeseen circumstances.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic G4 G28 G37

Local L12

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **preparing a port pilotage plan:**

1 All relevant data concerning the intended passage should be considered in a logical sequence, with contingencies and alternatives considered, where practicable.

2 A safe and expeditious route should be chosen, using all relevant data, to ensure that it will be possible for the piloted vessel to be navigated and remain safely afloat. The planned track should be designed to clear all known hazards safely.

3 All available data should be used to determine safe minimum under-keel clearances at critical points during the passage, and at the place of destination.

4 Courses and speeds for the passage should be evaluated. ETAs at selected criteria points should be determined accurately, as well as the projected arrival time at the disembarkation point.

5 For inbound vessels going alongside, the availability of the berth and safe access to it must be confirmed, as well as the vessel's intended berthing position, and which side to.

6 Variables should be taken into account. These may include, but are not limited to:

- tidal predictions
- weather forecasts
- effect of weather
- ground swell
- tug availability
- possible changes to other vessel movements
- notice for availability of ship's engines and equipment and readiness for use
- factors causing an increase in draught

7 Limitations of both the vessel and the port should be taken into account. The latter may include restricted docking and locking times.

8 Projected manoeuvring options should be carefully planned. These may include:

- major alter course positions
- predicted tidal flows
- wheel over positions
- turn radii
- rate of turn and speeds required
- integration with other anticipated vessel movements
- proposed swinging and/or berthing manoeuvres

9 Transits and clearing bearings should be clearly stated for critical points on the passage.

10 Potential hazards and abort points during the passage should be identified. Emergency anchorage positions or 'holding' areas should also be stated in the plan.

11 Tug requirements, availability and disposition, as well as tug rendezvous positions, should be clearly set out.

12 The plan, once drafted, should be discussed, if appropriate, with Port Control and other involved parties, cross-referencing and checking as necessary. These may include the ship's agents, statutory authorities, and other vessels navigating in the vicinity.

13 Radio working channels for tugs, mooring party and berthing master should be designated. Advice should be provided as to which channels should be monitored.

Element 1.3 Re-assessing the plan and modifying as necessary

Element summary

This element covers the evaluation of changing circumstances that might affect the plan. The pilot, assisted by others in the bridge team, will assess the data and decide what changes in the plan, if any, are necessary.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Local L21

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **re-assessing the plan and modifying it as necessary:**

1 The primary data that helped to form the plan should be reviewed on an ongoing basis to ascertain if any amendments are necessary.

2 Any changed circumstances should be recognised and acted upon. These may include:

- changes in proposed times due to port requirements
- changes in local conditions, including weather/visibility
- changes in ETA/ETD due to vessel delay or levels of traffic
- actual as opposed to predicted tidal conditions
- actual as opposed to predicted weather conditions
- failure of on-board equipment or machinery
- reassignment of berth
- non-availability of tug or mooring party
- changes to vessel's notified draught
- emergency situations

3 Developments in the weather should be closely monitored in case changes to the plan are deemed necessary.

4 Other vessel movements should be confirmed by appropriate means, including the monitoring of port VHF radio traffic.

5 Amendments or departures from the plan must be made known to relevant parties.

Unit 2 Embarking and disembarking

Unit Summary

Pilot transfer can take place when the vessel is underway, at anchor, moored, or alongside a berth. Transfer may be made by pilot boat, helicopter, directly from the shore, or from another vessel. The safety of the pilot and other personnel is paramount, requiring effective communication and co-operation between all parties.

This unit is in three parts, covering necessary preparations for embarkation or disembarkation by boat, transfer to or from a vessel that is underway, and transfer when the vessel is at anchor, moored or alongside.

Unit Structure

2 Embarking and disembarking

- **2.1 Preparing for transfer by pilot boat**
- **2.2 Transferring a pilot underway**
- **2.3 Transferring a pilot when not underway**

Generic and local knowledge

The following areas of knowledge are essential for the **whole** of this unit and will need to be properly understood before a pilot can be considered fully competent:

Generic	G18	G24	G25	G27	G29	G32	G33	G41
Local	L2	L14	L23	L30				

Element 2.1 Preparing for transfer by pilot boat

Element summary

This element covers the preparatory work that the pilot, in co-operation with the pilot boat crew, should undertake before the transfer takes place. It includes wearing the correct personal protective safety equipment, determining weather and sea conditions, establishing communications and ensuring that transfer equipment is ready and safe for use.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G12	G13
Local	L10	L21

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **preparing for transfer by pilot boat:**

1 The pilot boat coxswain should be consulted, as appropriate, on weather and sea conditions in the chosen pilot transfer area.

2 The pilot transfer area should be chosen to provide sufficient sea room, clear of navigational hazards or other traffic, in which the vessel may carry out manoeuvres required to provide a suitable speed, heading and lee for the pilot boat. The choice of transfer area should also take account of weather, swell patterns and tidal conditions and any natural shelter that may be available.

3 The choice of pilot transfer area should allow sufficient time for the Pilot and vessel's Master to discuss, agree and implement the port pilotage plan and make any necessary checks, observations and assessments.

4 Buoyancy equipment and suitable protective clothing should be worn at all times.

5 On joining a pilot boat in harbour or at sea, the pilot should endeavour to familiarise himself with the positions and stowage of the safety equipment fitted to that particular pilot boat.

6 VHF communication on the appropriate channels should be established and maintained with the vessel prior to and during pilot transfer. Upon disembarking, the Master should be requested to remain in contact with the pilot boat by VHF until the transfer is completed and the pilot boat is clear.

7 The vessel should be given timely advice on:

- the VHF communications channel to be used
- the intended rendezvous position and time
- movements of other vessels in the area
- the vessel's required course and speed during pilot transfer
- the side on which the pilot transfer equipment should be rigged
- the required height above sea level of the bottom rung of the pilot ladder
- whether man ropes or a heaving line are required
- the number of persons transferring

8 Prior to disembarkation the pilot boat and pilot should agree on the rendezvous position, course and speed required, side on which the pilot transfer equipment will be rigged and the number of persons transferring.

9 During the approach to the vessel, the pilot should remain inside the cabin until the pilot boat is at reduced speed and in the lee of the vessel.

10 Before boarding, the Pilot should confirm the intended boarding position with the pilot boat coxswain and if necessary amend the boarding position to avoid any hazard.

11 During the outward passage to board, the Pilot should monitor the Port Control VHF channel, where appropriate, to ensure familiarity with vessel movements in the area.

12 At night a check should be made on the adequacy of lighting on board the vessel at the pilot transfer point.

13 Before leaving the bridge the Pilot should obtain an assurance from the Master that the means of disembarkation is properly rigged and safe for use. The Pilot should also satisfy himself that it is safe and that its general condition complies with IMO and local regulations.

Element 2.2 Transferring a pilot underway

Element summary

This element covers considerations for choice of pilot transfer area, as well as the advice that the pilot needs to give to the vessel and the pilot boat.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G12	G13	G34	
Local	L7	L8	L10	L27

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **transferring whilst the vessel is underway:**

1 Radio communications must be established and maintained between the vessel and pilot boat at all times during the transfer.

2 Changing weather and sea state conditions should be monitored to ensure that the choice of pilot transfer area remains the best available. If conditions for pilot transfer are considered to be unsafe and no suitable alternatives are available the pilot transfer must be aborted.

3 During pilot transfer, the presence of an officer stationed at the ladder or point of access to the ship's deck, in direct communication with the bridge, should be established.

4 Where appropriate a check should be made that pilot boat personnel are using safety harnesses whilst on deck during pilot transfer and that man overboard recovery equipment is available and ready for use in the pilot boat.

5 Before the pilot steps on to the ladder or point of access to the ship's deck, he should establish it is secure by communication with those on the deck of the vessel. If there appears to be nobody on deck, he should not attempt to embark.

6 Before disembarking from a vessel underway, the Pilot should inform VTS/Port Control of the fact that he has handed over the conduct of navigation to the Master, and that he is about to disembark. Where appropriate, the outward route agreed with the Master after disembarkation should be stated to allow shore monitoring of the remainder of the outward passage.

7 Prior to leaving the bridge on departure the Master or other competent officer in charge of the vessel should be given clear directions regarding existing traffic movements in the vicinity, and advised of the safe route for departure from the disembarkation point.

8 If pilot transfer is by helicopter the necessary procedures must be discussed and agreed in advance between the helicopter pilot, the vessel's pilot and the vessel's master.

9 A full awareness of safety procedures should be obtained before helicopter operations commence.

Element 2.3 Transferring a pilot when not underway

Element summary

This element covers further considerations that will be necessary when transferring to or from a vessel that is at anchor, moored alongside a berth or another vessel, or in a lock.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic G26 G34

Local L1

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **transferring when the vessel is not underway:**

1 The potential difficulty of making an adequate lee whilst a vessel is at anchor should be recognised. The use of ship's engines, rudder and/or thruster(s) to make a lee should be considered, as should a move to a different area.

2 During pilot transfer at anchor or at buoyed moorings, the presence of an officer stationed at the ladder or point of access to the ship's deck, in direct communication with the bridge, should be established.

3 The pilot's personal life-saving apparatus and suitable protective clothing should be worn at all times.

4 If a vessel is alongside and the Pilot is transferring to or from the jetty, it should be established that it is safely moored before embarkation or disembarkation takes place and that at night the area is suitably lit. Where available, the Pilot must transfer by a proper gangway or accommodation ladder.

Unit 3 Assessing standards on the piloted vessel

Unit Summary

It will be of assistance to the pilot if he is able to gain an impression of standards on board the vessel, both before he embarks and once on board. If inadequacies or poor standards are observed, the pilot will be alerted to potential problems that may be experienced. The port pilotage plan should be revised as necessary and, if appropriate, consideration should be given to aborting the pilotage passage.

This unit is in three parts, covering the vessel's conduct, the crew's competence and the vessel's condition, and also sets out how the pilot should respond to any deficiencies found as a result of the evaluation of the vessel and its crew.

Unit Structure

3 Assessing standards on the piloted vessel

- **3.1 Evaluating the conduct of the vessel prior to boarding**
- **3.2 Evaluating the crew and assessing the vessel's condition**
- **3.3 Evaluating and responding to deficiencies**

Generic and local knowledge

The following areas of knowledge are essential for the **whole** of this unit and will need to be properly understood before a pilot can be considered fully competent:

(None for this unit – see separate elements)

Element 3.1 Evaluating the conduct of the vessel prior to boarding

Element summary

This element gives indicators as to what to expect and if any changes to the plan may be required. They represent an early warning to possible problems with the vessel, Master, Bridge Team, or crew, during the act of pilotage.

Knowledge required

The following will need to be properly understood for this specific element:

Generic G24

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **evaluating the conduct of the vessel prior to boarding:**

1 The vessel's manoeuvres in approaching the correct boarding area and provision of a lee should be observed.

2 Any shortcomings in communications, including language problems and radio procedures, should be identified.

3 The vessel's navigation and signal lights, flags and shapes should be checked, if appropriate, to ensure they are displayed correctly.

4 The vessel's comprehension and responsiveness to requests from the pilot boat and Port Control should be observed. If significant irregularities occur, the Master should be given an opportunity to explain why.

5 The vessel's compliance with navigational requirements in the port approaches should be observed.

6 The accuracy of the vessel's ETA/ETD should be noted, as should the vessel's readiness to depart. The reasons for any discrepancy should be established.

7 Where appropriate, the condition and rigging of the pilot ladder should be noted.

8 When a vessel is alongside, the Pilot should check that the means of access to the vessel is safely secured.

9 Should the Pilot experience any problems with the level of lighting or the ability to gain access safely to a berthed vessel, the matter should be reported as soon as possible.

Element 3.2 Assessing the vessel's condition and evaluating the crew

Element summary

Assessing the vessel's condition occurs both before and during the act of pilotage. It will be mainly visual, but may also be based on an opinion of the reliability and efficiency of the machinery and other equipment. The deck crew can be evaluated from the moment the pilot steps aboard, and from discussions with the Master. This element does not include evaluating the bridge team members.

Knowledge required

The following will need to be properly understood for this specific element:

Generic G5 G14 G22 G30 G33 G35 G39 G40

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **assessing the vessel's condition and evaluating the crew:**

1 The general appearance of the vessel and signs of previous hull damage should be carefully observed. If the vessel has a list, the reason for this must be clarified.

2 The vessel's overall condition and cleanliness should be assessed, both from the side and on board.

3 Boarding arrangements should be checked to ensure that a safe means of access is available.

4 Where possible, the vessel's draught marks should be checked to ensure that they can be easily seen and read, and that they agree with the declared draughts. In the event that this is not possible and the vessel's draught is critical to the operation, an assurance should be sought from the Master as to the reliability of the calculated or electronically indicated draught. Note should also be taken of the vessel's trim and state of propeller immersion.

5 The route from the point of entry to the bridge should be checked to ensure it is clear and safe.

6 The state of the bridge should be observed, together with the quality, operational efficiency and status of all navigational, communications and other electronic equipment. This will include checks for compass error, as well as noting the availability of relevant up-to-date charts.

7 The level of visibility from the bridge should be noted.

8 The Master should be asked to confirm that the engines, thrusters where appropriate and steering gear are all functioning within the full manoeuvring range.

9 Confirmation should be made that backups to vital equipment are available in the event of failure.

10 The co-operation of the officer at the pilot boarding location and other crew members should be observed.

11 Allowance should be made for any observed deficiencies in the deck crew members' levels of competence.

12 Any apparent deficiency in the number of crew members to effectively and satisfactorily handle the passage of the vessel should be noted.

13 Any communications problems between crew in other parts of the vessel and the bridge team should be noted. Where possible, action should be taken to overcome these problems.

Element 3.3 Evaluating and responding to deficiencies

Element summary

A pilot must inform the port authority whenever he learns in the course of his normal duties that there are deficiencies which may prejudice the safe navigation of the ship, or which may pose a threat of harm to the marine environment. Other deficiencies of a minor nature may be effectively dealt with on board and/or by a reassessment of the port pilotage plan. The response to deficiencies will depend on the severity of the problem, but in the event of major deficiencies will probably involve other team members.

The pilot may become aware of such deficiencies either through his own observations or, in the case of ships carrying dangerous goods, by reference to the completed Schedule 2 checklist, or by the absence of such a checklist.

Knowledge required

The following will need to be properly understood for this specific element:

Generic G3 G17 G21 G26

Local L17

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **evaluating and responding to deficiencies:**

1 All deficiencies must be brought to the attention of the master and rectification sought, if possible. Deficiencies which may prejudice the safe navigation of the vessel should be reported to the Harbour Master. Permission may have to be sought to continue the passage.

2 The pilot should evaluate the deficiency to ascertain if it affects the passage plan. If so, a decision must be made to see if the deficiency can be quickly remedied.

3 The port pilotage plan should be reviewed in the light of any deficiency.

4 A decision must be taken as soon as possible whether or not to commence, continue with caution, or to abort the pilotage act until the deficiencies are rectified. Sufficient knowledge must be acquired from relevant and accurate sources to make this decision. Where necessary, the Harbour Master or his authorised deputy must be consulted.

5 The use of a tug or additional tugs, if available, should be considered.

6 Schedule 2 format for reporting deficiencies should be used for vessels carrying dangerous or polluting goods.

Unit 4 Co-operating with the bridge team and functioning within it

Unit Summary

In order to ensure a safe passage, it is essential that there should be close co-operation between the Pilot and others in the bridge team. This will involve an early exchange of information. It is vitally important that the Master/Pilot relationship is clearly established.

An integral aspect, which helps to ensure a successful passage, involves an ongoing assessment of the capabilities of the bridge team. The conduct of the Master, the language in use and the team's general willingness and competence all contribute to this.

The Pilot will need to integrate fully within the bridge team, taking into account any deficiencies which may have been observed.

This unit is in three parts, covering the exchange of information on arrival, assessing the capabilities of the bridge team, and integrating with bridge team members.

Unit Structure

4 Co-operating with the bridge team and functioning within it

- **4.1 Exchanging relevant information**
- **4.2 Assessing the bridge team's capabilities**
- **4.3 Integrating with the bridge team**

Generic and local knowledge

The following areas of knowledge are essential for the **whole** of this unit and will need to be properly understood before a pilot can be considered fully competent:

Generic	G3	G4	G6	G17	G18	G26	G27	G28	G29	G32	G37

Element 4.1 Exchanging relevant information

Element summary

The exchange of information is essential for a safe and efficient passage, and should include any recent information which may not have been received by the vessel, or the pilot, or which becomes available during the course of the passage which may influence decision making and review of the port pilotage plan.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G4	G5	G7	G14	G16	G25	G30	G36	G38	G39	G40
Local	L1	L2	L3	L4	L5	L6	L9	L10	L12	L13	L14
	L15	L16	L18	L19	L20	L21	L22	L24	L25	L27	L29
	L30										

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **exchanging relevant information:**

1 An early exchange of information should be made, to include an explanation of the following, as appropriate:

- agreed port pilotage plan
- the critical stages of the passage
- contingencies
- expected traffic
- nature of the intended berth
- lock(s) that need to be transited
- port operations in progress
- recent local Notices to Mariners
- Defective navaids

2 Known deficiencies should be ascertained as early as possible, as well as the vessel's berthing requirements or mooring plans.

3 The vessel's current position should be verified with the Master and the movements of other vessels in the immediate vicinity established.

4 The Master should be apprised of the level and type of support required.

5 Handling and manoeuvring information relating to the vessel should be obtained as soon as possible. This includes provision of the Pilot Card.

6 The Master should be advised of any navigational changes in the port and its approaches.

7 The port pilotage plan should be exchanged and discussed with the Master, amending the vessel's own passage plan as necessary.

8 The plan should be agreed between Master and pilot and explained to the bridge team.

9 During the passage the bridge team should be kept informed and advised of the pilot's intentions.

10 Hazrep and Schedule 2 forms should be sighted where appropriate.

Element 4.2 Assessing the bridge team's capabilities

Element summary

This element deals with the effectiveness of the bridge team and its size. The level of expertise and interest may vary dramatically, as will the Master's ability and willingness to co-operate with the pilot.

These observations will assist the pilot and ensure that extra care is taken if any deficiencies are observed. Verbal communication with members of the bridge team may highlight potential problems, particularly with multinational crews.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic G7 G11 G14

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **assessing the bridge team's capabilities:**

1 The involvement of the Master during the passage should be ascertained, as well as his level of participation and presence on the bridge.

2 The welcome received by the pilot upon arrival on the bridge should be evaluated in professional terms.

3 The existence of the vessel's own passage plan should be ascertained.

4 The number of persons comprising the bridge team should be ascertained and their respective duties clarified, including the person who is to be the primary interface with the Pilot.

5 The efficiency, division of responsibilities and co-operation of the bridge team should be evaluated. The standard of communications between team members and their understanding of English should also be noted.

6 The team's familiarity and expertise in the use of bridge equipment should be observed.

7 The bridge team's level of preparedness for the anticipated pilotage transit and their degree of understanding of the requirements of the port pilotage plan should be noted.

8 The bridge team's willingness to respond promptly to the pilot's orders and requests should be noted, as should their general level of interest.

9 If a bridge team member repeatedly fails to comprehend instructions or has difficulty in performing his normal duties, the matter should be reported to the Master and, if appropriate, to the Harbour Master at the earliest opportunity.

10 The effectiveness and accuracy of navigational routines should be observed. Where appropriate this will include the plotting of the vessel's track and position on an up-to-date, corrected chart, and the recording of passage information such as timings and engine movements.

11 The handling of the vessel throughout the passage should be noted, as should the Officer of the Watch's responsiveness to the Master's or pilot's instructions.

12 The helmsman's competence and comprehension of orders should be observed, paying particular attention to the repeating back of helm orders. The rudder indicator and vessel's heading should be monitored to ensure that the helmsman is responding properly to orders.

13 Additional person(s) acting as lookout should be requested as necessary, with due regard to the prevailing weather conditions.

14 Ongoing checks should be made to ensure that the vessel's track and progress is effectively and frequently monitored.

15 Communications with the vessel's mooring parties and the level of understanding by those in charge should be observed.

Element 4.3 Integrating with the bridge team

Element summary

It is essential to establish a good working relationship between all bridge team members and to understand each person's role.

By law, the pilot has the conduct of the navigation of the vessel within a compulsory pilotage area, with the Master taking an overview and monitoring the vessel's progress. The Master remains in command of the vessel at all times and may remove the conduct of the navigation from the pilot if he judges the pilot to be incompetent or that the vessel's safety is being compromised.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic G21

Local L12

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **integrating with the bridge team:**

1 The handover of the navigation of the vessel should be made between the Master and the pilot. This should be recorded and where appropriate reported to Port Control. Any subsequent changes to the navigational conduct of the vessel should be similarly recorded and reported.

2 Sufficient time should be allowed for the bridge team to brief those crew members responsible for various deck functions.

3 Sufficient notice should be allowed for the crew to be at stations to carry out any required on board operations, taking possible tiredness into account.

4 Judgements based on cultural differences and all discriminatory remarks must be avoided.

5 A courteous, confident and professional approach should be maintained at all times.

6 An explanation of how the bridge team intends to support the pilot should be requested, if not provided.

7 Queries raised by members of the bridge team should be responded to immediately.

8 An appreciation must be made of any lack of familiarity with the port and its approaches.

9 Bridge equipment controls should be located and questions asked if unsure.

10 If the Master countermands the pilot's conning of the vessel, it should be immediately ascertained whether or not the Master has assumed the conduct of the navigation. If so, the change must be recorded and relevant people notified.

11 The bridge team should be requested to ensure that all instructions are acknowledged.

12 Agreement must be reached between Master and pilot as to who will manoeuvre the vessel in its final berthing or immediate unberthing stage.

Unit 5 Liaising and communicating within the port

Unit Summary

This unit concerns liaison between the pilot and the rest of the port team, including tugs, Port Control, mooring party, Harbour Master, operatives, and other vessels. It does **not** concern relationships within the bridge team.

Good communications need to be established, usually by VHF radio, but occasionally by other means. At all times it is important to take into consideration the requirements of other members of the port team.

This unit is in three parts.

Unit Structure

5 Liaising and communicating within the port

- **5.1 Communicating by radio**
- **5.2 Communicating by other means**
- **5.3 Co-operating with other port team members**

Generic and local knowledge

The following areas of knowledge are essential for the **whole** of this unit and will need to be properly understood before a pilot can be considered fully competent:

Generic	G24	G27	G28	G31
Local	L2	L14	L19	L29

Element 5.1 Communicating by radio

Element summary

This element covers the use of VHF or UHF radio for communicating with port team members and other vessels.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic G3 G9

Local L22

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **communicating by radio:**

1 A portable radio should be kept fully charged with a spare battery available.

2 Radio communications should be tested before operational use.

3 Checks should be made to ensure that radios are set to the correct channels, including the tug working channel. A listening watch should be maintained on the correct channels.

4 Clear and concise instructions and information should be provided as and when necessary, using correct radio procedures in standard English marine vocabulary. Jargon, colloquialisms and 'chat' must be avoided. Arguments, abuse and first names must not be transmitted over the radio.

5 Incoming information should be acknowledged using repeats where necessary to remove the possibility of misunderstandings or misinterpretations.

6 Radio communications should be kept to a necessary minimum.

7 Any limitations to local radio communications should be understood, including the location of blind areas.

8 Positions communicated must be as accurate as possible.

9 Charted names should, where available, take preference over the use of local names.

10 All required position or status reports should be made while in transit through the port.

11 Where appropriate, clearance to proceed must always be obtained from VTS or Port Control before commencing the pilotage.

Element 5.2 Communicating by other means

Element summary

This element covers spoken or written communications, as well as the use of various lights and signals.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic G9

Local L4 L13

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **communicating by other means:**

1 The spoken word should be used whenever appropriate.

2 Written communication should be utilised whenever a record is required. Communications sent by fax or other electronic means should be acknowledged.

3 Mobile phones should only be used when other reasonable means of communication are unavailable or inappropriate, and with the permission of the Master.

4 A list of important telephone numbers and contacts should be maintained, including an emergency telephone list that includes contact numbers for outside normal working hours.

5 Sound signals should be used as appropriate.

6 The Pilot should confirm with the Master that appropriate lights and day signals are displayed to reflect the vessel's own circumstances, eg deep draught, high speed, or restricted manoeuvrability.

Element 5.3 Co-operating with other port team members

Element summary

The pilot does not act alone; he requires the support and assistance of other members of the port team. It is therefore essential that he understands their problems and needs, and acts in such a way that good team working is encouraged and developed.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G5	G19	G21	G26	G30				
Local	L4	L6	L11	L12	L22	L24	L25	L28	L30

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **understanding the requirements of other port team members:**

1 The job titles of all relevant persons involved in the specific pilotage operation should be ascertained.

2 Communications with the port team should be established as soon as practicable after arrival on board.

3 Requirements and intentions should be clearly agreed in sufficient detail to ensure that all relevant persons involved with the operation understand their duties.

4 The important role that others have in ensuring that a vessel is able to navigate and manoeuvre safely and efficiently into and out of port must be fully appreciated.

5 The needs of team members also involved in operations with other vessels should be clearly understood.

6 If applicable, the Port's overall plan and priorities for traffic movement should be understood and adhered to.

7 Failures in communications between team members should be resolved in line with agreed procedures.

Unit 6 Transiting the pilotage district

Unit Summary

During the passage the pilot will need to monitor the vessel's position constantly, taking into account course and speed, as well as other factors that may influence position, including weather, tide, currents and depth of water.

The execution of the agreed passage plan will be verified against estimates and amended as required, following consultation with the bridge team, to ensure safety margins are maintained.

It is generally accepted that navigating vessels in confined waters requires different skills to those in deeper waters.

This unit is in three parts.

Unit Structure

6 Transiting the pilotage district

- **6.1 Determining the vessel's position**
- **6.2 Monitoring the vessel's progress**
- **6.3 Navigating vessels**

Generic and local knowledge

The following areas of knowledge are essential for the **whole** of this unit and will need to be properly understood before a pilot can be considered fully competent:

Generic	G2	G3	G4	G6	G7	G11	G14	G16	G27	G28	
Local	L4	L5	L6	L7	L9	L10	L13	L15	L16	L18	L20
	L21	L22	L27								

Element 6.1 Determining the vessel's position

Element summary

The pilot needs to use a range of methods to determine the vessel's position, which should be constantly monitored. Checks against the bridge team's methodology should be undertaken and any discrepancies resolved.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

(None for this element)

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **determining the vessel's position:**

1 All available methods for fixing the vessel's position should be used as appropriate.

2 Accurate position fixing must be achieved by cross-referencing one method with other viable secondary methods at frequent intervals, thereby avoiding reliance on a single system.

3 The limitations and potential errors in various position fixing methods should be fully appreciated, especially in the use of buoyage and other floating aids to fix position.

4 Traditional position fixing methods including bearings and transits should be balanced with the use, where possible, of electronic navigation equipment.

5 The bridge team's fixing methodology should be confirmed as acceptable whenever possible and all recorded positions should be agreed with the Master or assigned bridge team member. Cross-referencing of the vessel's position by the bridge team should be encouraged.

6 Where appropriate, the pilot should confirm that positional data is applied to the chart.

7 Where available, Port Control may be used to monitor a vessel's progress and verify her position as required, especially in conditions of reduced visibility. Where trained shore radar personnel are available to provide assistance, the onboard pilot can make practical use of this facility to ensure safety.

8 The vessel's gyro and magnetic compasses should be checked and any errors established and taken into account.

9 The performance and accuracy of the vessel's radars and compasses should be checked.

10 Underkeel clearance should be checked at appropriate intervals, and especially at critical stages of the passage.

11 Any discrepancy between the pilot and the bridge team in the vessel's calculated position should be resolved immediately.

Element 6.2 Monitoring the vessel's progress

Element summary

Various factors can influence the vessel's position, causing set and drift. Vessel speed over the ground must be checked and compared with estimated arrival times at intermediate points of the passage. Constant monitoring must be employed at all times to ensure the vessel is maintaining the planned track within acceptable tolerances. Action may need to be taken if circumstances change or new hazards emerge.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G12	G15	G38	
Local	L2	L3	L26	L29

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **monitoring the vessel's progress:**

1 Vessel operation and handling capabilities should be constantly evaluated.

2 Position and the effects of leeway, set and drift should be constantly monitored.

3 Course and speed should be adjusted as necessary in order to maintain the desired track as closely as possible. Any variations should be advised to the Master.

4 The echo sounder should be monitored to ensure under-keel clearance is as anticipated. The location of the transducer should be ascertained and it must be established if the reading is depth under keel or from the water line.

5 Weather, traffic, and the status of equipment and systems should be constantly monitored.

6 Arrival at key points of the passage, in accordance with the plan, should be ensured wherever possible.

7 The speed of the vessel both over the ground and through the water should be checked and cross-referenced by all available means. Undue reliance should not be placed on log or GPS speeds.

8 Emerging or new hazards should be identified and necessary action taken to overcome them. When poor visibility is anticipated the principles of blind pilotage should be adopted in good time.

9 Failure to arrive in good time at a tidal gate, or a forced transit through adverse tidal conditions outside acceptable parameters, are possibilities that must be kept under constant review. Commitment to a tidal gate passage should not be made without a fully viable alternative strategy in the port pilotage plan.

Element 6.3 Navigating vessels

Element summary

This element covers the safe navigation of a vessel within the waters of a pilotage district.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G12	G15	G19	G23	G25	G36	G37	G38
Local	L1	L2	L29	L30				

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **navigating vessels within the pilotage district:**

1 All available means should be used to ascertain the risk of collision. These will include visual lookout, compass bearings and radar plotting.

2 Appropriate radar range and display characteristics should be selected and the radar monitored throughout the passage.

3 Blind pilotage techniques, including parallel indexing, should be fully utilised whilst navigating in restricted visibility. These should be practised as a matter of routine in clear weather.

4 Manoeuvring control systems should be used with due regard to the principles of good seamanship.

5 Where possible, liaison should be maintained with the port team to minimise close quarter situations with other vessels, particularly in poor visibility. If applicable, Port Control priorities for vessel movement in poor visibility must be adhered to.

6 International and local regulations should be adhered to at all times.

7 Appropriate safety margins should be allowed for at all times.

8 The movement and position of other vessels in the vicinity should be monitored closely.

9 In the event of a heading or track control system being used, the Pilot should ensure that a competent helmsman other than the Master is in attendance at the steering position. The use of tracking or track control systems should be considered with extreme caution in adverse weather or conditions of poor visibility.

10 A check should be made of the gyro course following any alteration.

11 A check should be made that anchors are cleared away for immediate use, with the crew available in an emergency.

12 Due consideration should be given for past and present adverse weather conditions which may affect the operational efficiency of electronic navaids, as well as crew safety and effectiveness.

Unit 7 Manoeuvring vessels in harbours and their approaches

Unit Summary

This unit covers all aspects of manoeuvring within the pilotage district, and includes position fixing, manoeuvring in shallow or restricted waters, using tugs and the skills involved in arriving at or departing from a berth or mooring. The unit is in four parts.

Whilst a vessel is manoeuvring, external factors may move the vessel in a direction other than that which is intended. The early detection of this movement, and the actions required to compensate for it, are essential and fundamental. The ability to manoeuvre a vessel successfully depends largely on the pilot's spatial awareness. This is improved over time through practical experience and repetition, but a natural ability must initially be apparent.

Unit Structure

7 Manoeuvring vessels in harbours and their approaches

- **7.1 Handling different types and sizes of vessels**
- **7.2 Manoeuvring in different locations and conditions**
- **7.3 Working with tugs**
- **7.4 Arriving at and departing from berths, buoys, moorings, locks and anchorages**

Generic and local knowledge

The following areas of knowledge are essential for the **whole** of this unit and will need to be properly understood before a pilot can be considered fully competent:

Generic	G3	G12	G14	G15	G27	G29	G33	G36	G37	G39
Local	L2	L6	L15	L19	L27	L28	L30			

Element 7.1 Handling different types and sizes of vessel

Element summary

The ability to pilot a vessel safely and efficiently is dependent to a great degree on the pilot's experience of handling different sizes and types of vessels using the port. Great care must be taken to establish that the pilot has the necessary skills and experience. It is impossible for a pilot to retain the skills to handle all types and sizes of vessels unless conducted on a very regular basis. Understudying more experienced pilots, the use of manned models and simulators are all methods to achieve this.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic G25 G35 G38 G40

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **handling different types and sizes of vessel:**

1 All relevant factors should be taken into account to keep the vessel's movement under control at all times and within appropriate safety margins.

2 Manoeuvring characteristics of the vessel should be ascertained at the earliest opportunity. These may include:

- speed at different engine settings and effect on rate of turn
- usual movement of vessel on zero pitch setting (on vessels with a variable pitch propeller)
- stopping distances
- turning circles
- centres of pressure
- pivot points, including shift when moving astern
- transverse thrust characteristics of propellers
- effect of any list on draught
- steering qualities, including minimum steerage way

3 Other external factors, which may affect the manoeuvring characteristics of the vessel, should be taken into consideration. These may include:

- effect of leeway and drift
- wind interaction
- bank effect and shallow water effect
- interaction and squat
- tidal forces and currents
- differing water densities
- underkeel clearance

4 Different manoeuvring control systems should be understood and their effects on vessel handling taken into account. These may include:

- single or multiple propellers; their bias (right- or left-handed)
- fixed and variable pitch propellers
- type of propulsion fitted
- rudders, including active rudders
- thrusters, including types and effect on efficiency with shift in pivot point
- engine power and responsiveness
- percentage of full power available with engines operating astern
- number of consecutive air starts available, where applicable
- propeller nozzles, fixed and steering

5 The different handling and manoeuvring characteristics of different classes of vessel should be fully appreciated, including an awareness of vessel momentum with respect to time allowance for speed reduction in varying environmental conditions.

6 Opportunities to gain the widest possible experience should be maximised, including understudying other pilots.

Element 7.2 Manoeuvring in different locations and conditions

Element summary

Various factors affect the safe manoeuvring of a vessel, especially in shallow or restricted waters. This element includes the effects of tides, currents, weather and water depth. The use of anchors, moorings and/or tugs is also taken into account.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G1	G2	G10	G16	G25	G26	G38	G40			
Local	L1 L22	L3 L26	L4 L29	L5	L10	L11	L13	L14	L16	L18	L20

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **manoeuvring in different locations and conditions:**

1 The different requirements for manoeuvring vessels in particular tidal, non tidal, canal and river conditions should be fully understood.

2 The effect of currents and tidal streams causing set and drift on vessel manoeuvring should be taken into account, especially in restricted waters. Set and drift should be detected by all available means, especially by the use of transits when manoeuvring near a berth.

3 The effects of shallow water on manoeuvring capabilities of vessels should be taken into consideration, especially when turning, and the additional problems associated with size understood and considered.

4 The effects of squat and interaction should be taken into account.

5 The wash of a vessel should be closely monitored, especially in areas with small underkeel clearances.

6 Blockage factors should be fully understood and considered when using locks and dry docks, especially when minimal clearances and tidal constraints apply.

7 The effect of windage should be taken into account, especially at low speeds.

8 The use of tug assistance should be considered where appropriate.

9 The use of anchors, especially for low speed control, swinging and emergency stopping, should be considered whenever appropriate.

10 If an anchor is to be used as part of the berth approach plan, the anchoring party must be informed of the intended manoeuvre in good time.

11 The use of ropes and moorings to assist in swinging or other manoeuvres should be considered whenever appropriate.

12 Tidal and weather parameters for arriving and departing at specific berths should be known and complied with.

13 In narrow channels, factors affecting safe manoeuvring should be taken into account. These may include:

- pressure zones
- bank configuration
- bends in rivers
- passing or overtaking in channels
- slow speed control
- turning circles
- thrusters - whether moving the vessel ahead or astern
- manoeuvring close to other vessels or structures

14 All manoeuvres must be undertaken at a safe speed with due consideration to the effects of the manoeuvre on others.

15 The effects of flare, overhangs or obstructions upon clearance through locks and dock passages should be considered.

Element 7.3 Working with tugs

Element summary

To understand different tug characteristics fully, it will be beneficial for a pilot to spend time on board tugs during pilotage operations. Updating of knowledge will be necessary. Close communications with tug masters are essential to ensure a safe transit with a tug or tugs. Familiarity with the abilities and preferences of individual tug Masters is also desirable, where possible.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic G24 G35

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **working with tugs:**

1 Tug disposition and towing procedures should be discussed and agreed with the tug Master.

2 Port specific tug knowledge and operating potential should be kept updated.

3 Communications with tugs, including emergency and sound signals, should be checked and agreed before operations commence. Standard orders should be used where they have been developed when communicating with tugs.

4 The general advantages and disadvantages, capabilities and limitations, and manoeuvring characteristics of different types of tugs should be clearly understood. These may include:

- interaction
- girting
- line of sight
- bollard pull
- dynamic towing forces
- types of towing gear
- use of tug's weight
- push/pull towage
- use in adverse weather conditions
- speed limitations
- messenger lines of adequate strength and length
- direct and indirect towing methods
- safety of tugs whilst towing
- disengagement (emergency) procedure
- escort towage

5 Suitability of vessel's fairleads and bitts should be ascertained, including safe working loads, if known.

6 The vessel's course and speed during the connection of the tow should take into account the capabilities of the tug involved and any other relevant conditions.

7 Tugs should be advised when making significant changes in engine movements or heading.

8 Orders to tugs for manoeuvring must be given clearly and unambiguously. A check should be made that they have been received and carried out.

9 Where possible visible checks should be made to ensure that vessel's personnel handle tug lines correctly and safely, especially when letting go.

10 The limitations of towing in restricted visibility should be understood, and the opinions and wishes of the tug Master with regard to his own responsibilities respected.

Element 7.4 Arriving at and departing from berths, buoys, moorings, locks and anchorages

Element summary

Close liaison with port team members is essential, as they will often be involved in letting go or securing the vessel. All methods of assistance should be understood, including the use of anchors, vessel's manoeuvring equipment, tugs, mooring boats and vessel's lines.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G1	G6	G11	G16	G23	G24	G26	G35	G38	G40	
Local	L1 L20	L3 L22	L4 L29	L5	L7	L9	L10	L11	L14	L16	L18

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **arriving at and departing from berths, buoys, moorings and anchorages:**

1 Communications between all parties should be checked and established before operations commence, and intentions confirmed. The presence of tugs, Berthing Master, mooring boat and boatmen/linehandlers, as appropriate, should be confirmed.

2 Arrangements and limitations for berths, buoys, moorings and anchorages should be taken into consideration.

3 The effects of tides, currents and wind on the manoeuvre should be taken into account.

4 Before commencing any manoeuvre, confirmation should be sought that engines, bow thrusters and steering gear have been fully tested and that safety checks have been completed.

5 When anchoring, the procedure should be agreed in advance.

6 Confirmation should be sought that anchors are cleared. The quality of the holding ground should also be confirmed as adequate for the size of vessel.

7 When preparing to anchor and working with tugs or mooring boats, confirmation should be obtained that they are clear of the anchors before letting go.

8 Before using thrusters and engines, checks should be made that all line handling craft, mooring lines and tugs are clear of potential contact points and that there are no obstructions to prevent safe operations.

9 When working with mooring boats, extreme care must be taken to ensure that they are not trapped between the vessel and the shore. Due allowance must be made for their clearance times, especially if the wind is onto a berth or jetty.

10 The Berthing Master and boatmen/linehandlers must be informed in advance of any unusual requirements, including any known facts relating to the vessel's ropes or wires which may affect line handling.

11 The crew should be confirmed as standing by, ready to come alongside, or moor, or let go anchors.

12 Springs, lines, fenders and other associated equipment should be used as and when appropriate.

13 Prior to arrival the mooring plan should be agreed between the pilot and the Master and where possible communicated to the boatmen/linehandlers and crew, together with the required order and method of running lines. The location of mooring bollards and/or hooks should also be ascertained before use.

14 Prior to departure the procedure for singling up should be agreed between the pilot and the Master and communicated to the boatmen/linehandlers.

Unit 8 Reacting and responding to problems and emergency situations

Unit Summary

A pilot must possess the ability to respond accurately and quickly to any problem, especially if it is a potential or actual emergency situation. This will require an ability to stay calm and make effective rapid decisions and convey them effectively to other members of the Bridge and Port teams.

This unit does not attempt to list the many different problems or emergencies that could arise; some indeed may be very minor. Instead it addresses the importance of safety – of life, vessel(s) and the environment. However, it should always be borne in mind that a minor malfunction has the potential of developing into a major one.

The unit is in three parts.

Unit Structure

8 Reacting and responding to problems and emergency situations

- **8.1 Managing ship-board malfunctions and problems**
- **8.2 Dealing with emergencies**
- **8.3 Facilitating problem-solving**

Generic and local knowledge

The following areas of knowledge are essential for the **whole** of this unit and will need to be properly understood before a pilot can be considered fully competent:

Generic	G22	G27	G29
Local	L1	L24	

Element 8.1 Assisting in the management of ship-board malfunctions and problems

Element summary

Malfunctions and problems may range from the very minor, to extremely serious, requiring classification as an emergency. They may be applicable to the vessel or personnel on board. The Master will manage ship-board malfunctions and problems, but the pilot will probably have a role in assisting.

Minor malfunctions and problems may need nothing more than a little extra consideration and be dealt with on board, whilst more serious malfunctions, problems and emergencies will almost certainly require involvement, and possible assistance, from other Port and Bridge team members, and possibly general emergency services.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G3	G5	G14	G15	G20	G21	G24	G30	G32	G33	G34
	G35	G36	G37	G39							
Local	L2	L4	L5	L10	L12	L14	L29				

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **assisting in the management of ship-board malfunctions and problems:**

1 If an on-board malfunction should occur, the response must prioritise, so far as is reasonably practical, the safety of life, and minimise the risk to the vessel, other vessels in the vicinity, the environment and the local infrastructure.

2 In the event of a problem involving the Master, Bridge Team or the crew, the port pilotage plan may have to be reviewed and revised, or the operation aborted.

3 Where appropriate, Port Control should be made aware of the situation at the earliest opportunity.

4 A contingency plan should be developed for any major malfunction, problem or emergency that may occur at any stage of the passage. This may include:

- availability of temporary anchorages
- suitable abort points
- use of suitable grounding areas
- leaving the buoyed channel at suitable locations
- summoning outside assistance
- use of emergency or escort towage
- communications and visual signals

5 The Port's safety plan and the vessel's safety plan should both be enacted as necessary.

6 Where possible, emergency situations should be simulated to test the effectiveness of contingency plans.

7 Port team members should be consulted to ensure that any assumptions made in the contingency plan are valid.

8 Feedback should be obtained from previous incidents and changes made to contingency plans where appropriate.

Element 8.2 Dealing with emergencies

Element summary

Contingency plans will be in place to deal with any likely emergency. In any vessel emergency the pilot is likely to have a front-line role. A port, as with any other organisation, must establish an overall safety awareness and plan for potential emergencies.

The establishment of a Port Safety Plan covering all potential emergencies is essential. This may cover other emergencies not directly linked to the vessel being piloted, but having implications for that vessel's safety. In an emergency situation the pilot, being the responsible person from the port onboard the vessel, may be expected to take directions from Port Control or the Harbour Master.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G5	G9	G20	G21	G30	G32	G34	G35	G36	G37	G39
Local	L2	L4	L5	L6	L10	L14					

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **dealing with emergencies:**

1 In the event of a breach in hull integrity, appropriate action must be taken in accordance with port procedures, and in conjunction with the vessel's emergency plan. Pollution, particularly by oil or chemicals, must be reported immediately to the Harbour Master.

2 Man overboard and search and rescue procedures must be implemented as necessary.

3 In the event of any on board vessel emergency, Port Control or other appropriate authority must be advised immediately, providing as much relevant information as possible.

4 After consultation with the Master and Harbour Master, tug assistance should be summoned at an early stage if appropriate.

5 Safe anchorages should be checked as available for use and other areas not normally used, considered.

6 Where possible the Harbour Master should be consulted if a decision needs to be made for a safe anchorage or grounding.

7 Ways of deploying escort tugs should be considered under a variety of conditions.

8 The content of the Port Marine Emergency Plan must be complied with.

9 The effect of an external emergency on the piloted vessel should be fully considered.

10 The capability of the piloted vessel to provide assistance in the event of an emergency within the Port, or to another vessel, should be fully evaluated before offering assistance.

11 Clear, concise, factual and accurate written reports should be completed as soon as possible after an incident and made available to the Harbour Master.

12 Responses to emergency situations should be properly evaluated following the incident and feedback provided to other pilots.

13 Potential incidents should be analysed and reported if appropriate.

Element 8.3 Facilitating problem solving

Element summary

Pilots should develop a strategy for using a variety of skills in problem solving and must be able to demonstrate proficiency in seeking solutions to problems that may arise during the course of their work.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic G33

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **facilitating problem solving:**

1 The activities being undertaken should be analysed and potential problems areas identified.

2 A variety of options should be considered for solving each problem and those which have a reasonable chance of success identified.

3 Where appropriate, other relevant people should be consulted, in order to arrive at reasoned solutions to problems.

4 Evidence should be provided to support approaches to problem-solving.

5 The effectiveness of solving problems should be assessed in order to identify ways of enhancing skills in this area.

6 The use of marine simulators to develop problem solving skills should be considered.

9 Managing personal and professional conduct and development

Unit Summary

Whilst previous units have concentrated on specific competences related directly to pilotage, this unit considers the importance of maintaining professionalism and of updating skills in order to continually improve performance.

A pilot should always be in a fit state to carry out his duties effectively.

Unit Structure

Generic and local knowledge

The following areas of knowledge are essential for the **whole** of this unit and will need to be properly understood before a pilot can be considered fully competent:

Generic G20 G27 G29 G34

9.1 Maintaining professional standards

Element summary

To the Master of a vessel visiting a port, the pilot is the first person from the port he sees. The pilot is therefore an ambassador for the port and, indeed, the country. It is vital that he conducts himself in a wholly professional manner, with dignity, courtesy and decorum.

Additional knowledge required

In addition to the knowledge components listed at the start of this unit, the following will also need to be properly understood for this specific element:

Generic	G3	G7	G15	G17	G18	G19	G21	G41
Local	L4	L29						

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **maintaining professional standards:**

1 A pilot should present himself for duty on time, suitably rested, and in a manner appropriate for undertaking an effective act of pilotage.

2 A pilot should never attempt to conduct an act of pilotage when under the influence of any drug which may impair his professional judgement.

3 Dealings with all other members of the port team should be conducted in a professional and constructive manner.

4 Responses to questions from the Master or members of the Bridge Team must be provided respectfully, and given in an appropriate professional manner.

5 Personal safety must be ensured at all times.

6 Assistance should be provided with relevant risk assessments and problems reported which may impact on future risk assessments.

7 Reporting of incidents should be undertaken in accordance with laid-down procedures.

8 All actions should take into consideration the importance of being part of a team.

9 A high standard of personal organisation should be achieved.

9.2 Improving personal performance

Element summary

A pilot should continuously develop and review his own skills. It is also important to update and improve his knowledge of information sources in order to further his performance and effectiveness as a competent pilot. He should be able to manage his time effectively.

Performance Statements

The following standards must be achieved for a pilot to be considered competent at **improving personal performance:**

1 Personal skills and development needs should be assessed at appropriate intervals.

2 Plans for developing personal skills should be consistent with the identified needs.

3 Development activities should be undertaken which are consistent with plans to develop personal skills.

4 Regular updates should be made in respect of new regulations, developments, equipment, and relevant professional knowledge. Awareness should be maintained of local, national and international statutory and advisory publications.

5 All relevant hydrographic information obtained by the port should be examined regularly.

6 Personal copies of published nautical charts should be kept up to date.

7 Every effort should be made to become acquainted with the characteristics of new harbour vessels or tugs commencing operations within the port.

8 Estimates of time needed for various activities should be realistic, with an allowance made for unforeseen circumstances.

9 Feedback on personal performance should be obtained from relevant people and used to enhance future performance.

MEMBERS OF STEERING GROUP

Capt Mark Andrews	Harbour Master	Milford Haven Port Authority
Capt John Brown	Pilot	Association of Forth Pilots
Rod Brown	Consultant	
Andrew Burr	Ports Division 2	DETR
Richard Carr	Harbour Master	Port of London Authority
Simon Davey	Pilot	Harwich Haven Authority
Capt Jerry Drewitt	Harbour Master	Tees & Hartlepool Port Authority
Capt Mike Evans	Harbour Master	Portsmouth Commercial Port
Capt Bob Fawcett	Deputy Harbour Master	ABP Barrow
John Hamilton		British Tugowners' Association
Capt Bill Hargreaves	Pilot	ABP Southampton
Capt Stephen Holland	Pilot	Humber Pilots Ltd
Bob Jones	Chief Executive	British Ports Industry Training
Steve Knuckey	Pilotage Manager	Mersey Docks and Harbour Company
Capt John Lorking	Harbour Master	King's Lynn Conservancy Board
John Riding	Risk and Port Consultant	Marico Marine
Capt Jim Simpson	Chief Harbour Master	Forth Ports plc
Roger Towner	Examiner of Masters and Mates	Maritime and Coastguard Agency
Capt Avald Wymark	Pilot	The Bristol Pilots' Partnership