

PILOTAGE ADVISORY COMMITTEE WORKING GROUP

Discussion on Training and Assessment Arrangements for Pilots

Purpose

The purpose of this paper is to seek members' advices and comments on training and assessment arrangements as well as the examination syllabus for pilots under the framework endorsed in the Pilotage Advisory Committee (PAC) meeting held on 18 January 2013 (Annex I).

Proposed Training and Assessment Arrangements

2. The proposed arrangements are at Annex II. It generally abided to the framework as endorsed by PAC in respects of simulation training, practical vessel training, practical assessment (in-house), oral examination, written examination and continued professional development programme. There is 1 proposed alternation in the practical assessments conducted jointly by Marine Department (MD) and the pilot association (HKPA).

3. In the endorsed framework, there should be 3 practical assessment at Class IIA and 1 practical Assessment at Class IID conducted jointly by (MD) and (HKPA). For a better monitoring of the progress, it is proposed to make a slight alternation so that there would be 2 practical assessments at each of these 2 classes.

4. For Class IID, the 2 practical assessments to be conducted on ships of LOA >210m to ≤250m, one each for a bulker and tanker.

5. For Class IIA, the 2 practical assessments to be conducted on ships of any type with LOA >350m.

Examination Syllabuses

6. The examination syllabuses currently in use at Annex III were endorsed in the PAC meeting held on 30 June 2005.

7. After consultation with HKPA and examiners, examination syllabuses for the new structure expected to come in force in 2016 is proposed at Annex IV.

Advice sought

8. Members' advices and comments are sought on the proposed syllabuses, training and assessment arrangements.

Pilotage Unit
Marine Department
December 2015

Proposed Training, Assessment and Examination Arrangement

Pilot Class	Maximum Length (Proposed)	Training & Assessment for Upgrading to next higher class
I	Any length	Continued Proficiency Development Programme (including simulation practice in a 5-year cycle since 2007)
II A	350m	Oral Examination (by PAC members) 3 joint practical assessments by HKPA and MD Simulation training conducted by HKPA and MD
II B	300m	2 practical vessel-training 1 practical assessment by HKPA Simulation training conducted by HKPA and MD
II C	250m	2 practical vessel-training 1 practical assessment by HKPA Simulation training conducted by HKPA and MD
II D	210m	2 practical vessel-training 1 joint practical assessment by HKPA and MD Simulation training conducted by HKPA and MD
II E (new)	180m	2 practical vessel-training 1 practical assessment by HKPA Simulation training conducted by HKPA and MD
II F (new)	160m	2 practical vessel-training 1 practical assessment by HKPA Simulation training conducted by HKPA and MD
Apprentice	Training as per Cap. 84C Schedule 1	4 practical assessments, of which, 1 shall be jointly assessed by HKPA and MD Simulation training conducted by HKPA and MD Oral & Written Examinations (by PAC members)

Remarks: All practical vessel training and assessments are set for vessel of next higher class.

For both the simulation training and practical assessment, PAC members would be invited to attend as observers.

Training and Assessment Arrangements for Pilots (2016)

	Apprentice	IIF	IIE	IID	IIC	IIB	IIA	I
Simulation Training (MD +HKPA)	1	1	1	1	1	1	1	-
Practical Vessel Training (HKPA)	Cap.84C,S1	2	2	2	2	2	2	-
Practical Assessment (HKPA)	3	1	1	-	1	1	1	-
Practical Assessment (MD & HKPA)	1	-	-	2	-	-	2	-
Oral Examination (PAC)	1	-	-	-	-	-	1	-
Written Examination (MD)	1	-	-	-	-	-	-	-
Continued Proficiency Development Programme	-	-	-	-	-	-	-	1

(It is proposed to move 1 practical Assessment from Class IIA to Class IID for a better monitoring of progress)

Training and Assessment Arrangements for Pilots (2016)

Pilot Class	Maximum Length	Training & Assessment for Upgrading to next higher class	
I	Any Length	Continued Proficiency Development Programme	in 5-year cycle comprise of lectures on professional topics, application of modern electronic navigational aids and simulation practice.

Training and Assessment Arrangements for Pilots (2016)

Pilot Class	Maximum Length	Training & Assessment for Upgrading to next higher class	
II A	350m	Simulation training (MD and HKPA)	Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels with LOA > 350m in various locations within HK waters. Candidate should complete all 6 training scenarios and :- (i) taking the role of pilot-in-charge in 2 scenarios; (ii) taking the role of a member of the bridge team in 2 scenarios; and (iii) taking any roles in the wheelhouse in 2 scenarios.
		2 practical vessel-training (HKPA)	Piloting & berthing a ship of any type with LOA >350m but need not be >365m on 2 occasions.
		1 practical assessment (HKPA)	Piloting & berthing a ship of any type with LOA >350m but need not be >365m on 1 occasions.
		2 joint practical assessments (MD and HKPA) <i>(it is proposed to move the third assessment to Class IID)</i>	Piloting & berthing a ship of any type with LOA > 350m on 2 occasions.
		Oral Examination (PAC)	As per annex IV to PAC paper No. 5/2015

Training and Assessment Arrangements for Pilots (2016)

Pilot Class	Maximum Length	Training & Assessment for Upgrading to next higher class	
II B	300m	Simulation training (MD and HKPA)	Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels length from >300m to ≤ 350m in various locations within HK waters. Candidate should complete all 6 training scenarios and :- (i) taking the role of pilot-in-charge in 2 scenarios; (ii) taking the role of a member of the bridge team in 2 scenarios; and (iii) taking any roles in the wheelhouse in 2 scenarios.
		2 practical vessel-training (HKPA)	Piloting & berthing a ship of any type with LOA from >300m to ≤350m on 2 occasions.
		1 practical assessment (HKPA)	Piloting & berthing a ship of any type with LOA from >300m to ≤350m on 1 occasion.

Training and Assessment Arrangements for Pilots (2016)

Pilot Class	Maximum Length	Training & Assessment for Upgrading to next higher class	
II C	250m	Simulation training (MD and HKPA)	<p>Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels length from >250m to ≤300m in various locations within HK waters.</p> <p>Candidate should complete all 6 training scenarios and :-</p> <ul style="list-style-type: none"> (i) taking the role of pilot-in-charge in 2 scenarios; (ii) taking the role of a member of the bridge team in 2 scenarios; and (iii) taking any roles in the wheelhouse in 2 scenarios.
		2 practical vessel-training (HKPA)	<ul style="list-style-type: none"> (i) Piloting & berthing a container ship with LOA from >250m to ≤300m on 1 occasion. (ii) Piloting & berthing a bulker or tanker ship with LOA from >250m to ≤300m on 1 occasion
		1 practical assessment (HKPA)	<p>Piloting & berthing a bulker or tanker ship with LOA from >250m to ≤300m on 1 occasion.</p>

Training and Assessment Arrangements for Pilots (2016)

Pilot Class	Maximum Length	Training & Assessment for Upgrading to next higher class	
II D	210m	Simulation training (MD and HKPA)	<p>Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels length from >210m to ≤ 250m in various locations within HK waters.</p> <p>Candidate should complete all 6 training scenarios and :-</p> <ul style="list-style-type: none"> (i) taking the role of pilot-in-charge in 2 scenarios; (ii) taking the role of a member of the bridge team in 2 scenarios; and (iii) taking any roles in the wheelhouse in 2 scenarios.
		2 practical vessel-training (HKPA)	<ul style="list-style-type: none"> (i) Piloting & berthing a bulker or tanker ship with LOA from >210m to ≤250m on 1 occasion; and (ii) Piloting & berthing a container of ship with LOA from >210m to ≤250m on 1 occasion.
		<p>2 joint practical assessment (MD and HKPA)</p> <p><i>(it is proposed to move 1 practical assessment from Class IIA to this Class)</i></p>	<ul style="list-style-type: none"> (i) Piloting & berthing a bulker ship with LOA from >210m to ≤250m on 1 occasion. (ii) Piloting & berthing a tanker ship with LOA from >210m to ≤250m on 1 occasion.

Training and Assessment Arrangements for Pilots (2016)

Pilot Class	Maximum Length	Training & Assessment for Upgrading to next higher class	
II E	180m	Simulation training (MD and HKPA)	<p>Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels length from >180m to ≤210m in various locations within HK waters.</p> <p>Candidate should complete all 6 training scenarios and :-</p> <ul style="list-style-type: none"> (i) taking the role of pilot-in-charge in 2 scenarios; (ii) taking the role of a member of the bridge team in 2 scenarios; and (iii) taking any roles in the wheelhouse in 2 scenarios.
		2 practical vessel-training (HKPA)	<ul style="list-style-type: none"> (i) Piloting & berthing a bulker or tanker of ships with LOA from >180m to ≤210m on 1 occasion; and (ii) Piloting & berthing a container of ships with LOA from >180m to ≤210m on 1 occasion.
		1 practical assessment (HKPA)	<p>Piloting & berthing a ship of any type with LOA from >180m to ≤210m on 1 occasion.</p>

Training, Assessment and Examination Arrangement (2016)

Pilot Class	Maximum Length	Training & Assessment for Upgrading to next higher class	
II F	160m	Simulation training (MD and HKPA)	<p>Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels with LOA from >160m to ≤ 180m in various locations within HK waters.</p> <p>Candidate should complete all 6 training scenarios and :-</p> <ul style="list-style-type: none"> (i) taking the role of pilot-in-charge in 2 scenarios; (ii) taking the role of a member of the bridge team in 2 scenarios; and (iii) taking any roles in the wheelhouse in 2 scenarios.
		2 practical vessel-training (HKPA)	<ul style="list-style-type: none"> (i) Piloting & berthing a bulker or tanker ships with LOA from >160m to ≤180m on 1 occasion; and (ii) Piloting & berthing a container ships with LOA from >160m to ≤180m on 1 occasion.
		1 practical assessment (HKPA)	<p>Piloting & berthing a ship of any type with LOA from >160m to ≤180m on 1 occasion.</p>

Training, Assessment and Examination Arrangement (2016)

Pilot Class	Maximum Length	Training & Assessment for Upgrading to next higher class	
Apprentice	NA	Simulation training (MD and HKPA)	Simulation training conducted by HKPA and MD
		Practical vessel-training (HKPA)	Training as per Cap. 84C Schedule 1
		3 practical assessments (HKPA)	(i) Piloting & berthing a bulker ship with LOA from >100m to ≤160m on 1 occasion; (ii) Piloting & berthing a tanker ship with LOA from >100m to ≤160m on 1 occasion; and (iii) Piloting & berthing a container ship with LOA from >100m to ≤160m on 1 occasion.
		1 joint practical assessment (MD and HKPA)	Piloting & berthing a ship of any type with LOA from >100m to ≤160m on 1 occasion.
		Oral Examination (PAC)	As per annex IV to PAC paper No. 5/2015
		Written Examination (MD)	As per annex IV to PAC paper No. 5/2015

**Class I Pilots
Examination Syllabus
(Revised Version, June 2005)**

Practical Examination

The practical examination should consist of three berthings as follows:

- (i) Berthing a container vessel of not less than 260m in length to Kwai Chung terminal.
- (ii) Berthing a dry cargo vessel/bulker of not less than 260m*¹ in length to any dry cargo vessel/bulker berth.
- (iii) Berthing an oil tanker of not less than 260m*² in length to any oil tanker berth.

*¹ If a dry cargo vessel/bulker of not less than 260m is not available within 3 months prior to the date of upgrading, the candidate may take the practical examination with a dry cargo vessel/bulker of less than but as far as practical close to 260m in length.

*² If an oil tanker of not less than 260m is not available within 3 months prior to the date of upgrading, the candidate may take the practical examination with an oil tanker of less than but as far as practical close to 260m in length.

Oral Examination

A comprehensive knowledge of:

- (i) Tidal streams, depths and shoals throughout Hong Kong waters.
- (ii) Characteristics of all lights, buoys, beacons, bridge lighting system and harbour facilities throughout Hong Kong waters.
- (iii) Depths and scope of berth at all Government mooring buoys.
- (iv) Limits of local pilotage areas including prohibited areas, anchorages and areas of restriction of any kind.
(These will be indicated by the candidate on a plan of Hong Kong waters.)

- (v) Berthing and unberthing at various wharves, piers, buoys, etc. in Hong Kong under the influence of wind, current and tide. (Models will be used for demonstration.)
- (vi) Manoeuvring behaviour of the types of ships expected to be piloted and the limitations imposed by particular propulsion and steering systems
- (vii) Use and limitation of various types of tugs
- (viii) The bridge equipment and navigational aids used for navigation, i.e. radar, Automatic Identification System (AIS), Electronic Chart Display and Information System (ECDIS), etc.
(It is assumed the candidate is able to transmit distress signal by using VHF Digital Selective Call (DSC).)
- (ix) Systems of radio navigational warning broadcasts in Hong Kong and the type of information broadcast.
- (x) International Regulations for Preventing Collisions at Sea 1972 as amended, and port regulations and pollution prevention rules.
- (xi) Use of VHF in accordance with the International recognized standards
- (xii) Hong Kong Merchant Shipping Notice and Hong Kong Merchant Shipping Information Note
- (xiii) Handling emergency conditions, i.e. collision with other vessel, grounding, loss of steering, loss of propulsion, failure of vital systems and automation etc., in a narrow channel or fairway.

Note

- (i) *Examination Syllabus of Class II Pilots may be included in Class I examination.*
- (ii) *Candidates will be expected to achieve a higher standard in the oral examination than Class II candidates.*
- (iii) *Candidates will be required to produce their training record to the examiners, including a record of any internal and external training and courses attended.*

Class II Pilots
Examination Syllabus
(Revised Version, June 2005)

Written Examination

- (i) Knowledge of Pilotage Ordinance (Cap. 84) and the Berthing Guidelines
- (ii) Navigational knowledge of the Hong Kong waters:
 - (a) Tidal streams, depths and shoals throughout Hong Kong waters.
 - (b) Characteristics of all lights, buoys, beacons, bridge lighting system and harbour facilities throughout Hong Kong waters.
 - (c) Depths and scope of berth at all Government mooring buoys.
 - (d) Limits of local pilotage areas including prohibited areas, anchorages and areas of restriction of any kind.
- (iii) Knowledge of ship handling:
 - (a) Berthing and unberthing at various wharves, piers, buoys, etc. in Hong Kong under the influence of wind, current and tide.
 - (b) Manoeuvring behaviour of the types of ships expected to be piloted and the limitations imposed by particular propulsion and steering systems.
 - (c) Precautions to be taken when passing close to other vessels underway or at moorings.
 - (d) The effects of and the uses to which transverse thrust may be put. The effects when used in conjunction with a bow thruster.
 - (e) Turning short round. The use of the anchor when manoeuvring or berthing.

- (f) Use and limitation of various types of tugs
- (g) Precautions to be taken when using lines to mooring buoy.
- (iv) Relationship with Master:
 - (a) Information which pilot should obtain from Master upon boarding e.g. Handling characteristics of ship, type of cargo, (D.G., etc.) damage to ship which might affect handling.
 - (b) Information which pilot should offer to Master upon boarding e.g. Preparations for mooring, berthing, anchoring, signals required, use of VHF etc.
 - (c) Advice to Master riding out typhoons in Hong Kong harbour or anchorages.
 - (d) Undue interference from Master.
- (v) Handling emergency conditions, i.e. collision with other vessel, grounding, loss of steering, loss of propulsion, failure of vital systems and automation etc., in a narrow channel or fairway.

Oral Examination

A comprehensive knowledge of:

- (i) Syllabus contained in the written examination
- (ii) The bridge equipment and navigational aids used for navigation, i.e. radar, Automatic Identification System (AIS), Electronic Chart Display and Information System (ECDIS), etc.
(It is assumed the candidate is able to transmit distress signal by using VHF Digital Selective Call (DSC).)
- (iii) Systems of radio navigational warning broadcasts in Hong Kong and the type of information broadcast.

- (iv) International Regulations for Preventing Collisions at Sea 1972 as amended, and port regulations and pollution prevention rules.
- (v) Use of VHF in accordance with the International recognized standards
- (vi) Hong Kong Merchant Shipping Notice and Hong Kong Merchant Shipping Information Note
- (vii) Collection of evidence in incidents

Note

- (i) *Candidates will be required to produce their training record to the examiners, including a record of any internal and external training and courses attended.*

**Class I Pilots
Examination Syllabus
(proposed 2016)**

Practical Examination

The practical examination should consist of two berthings of ship of any types with LOA >350m.

Oral Examination

A comprehensive knowledge of :-

- (i) Tidal streams, depths and shoals throughout Hong Kong waters.
- (ii) Characteristics of all lights, buoys, beacons, bridge lighting system and harbour facilities throughout Hong Kong waters.
- (iii) Depths and scope of berth at all Government mooring buoys.
- (iv) Limits of local pilotage areas including prohibited areas, anchorages and areas of restriction of any kind.
(These will be indicated by the candidate on a plan of Hong Kong waters.)
- (v) Berthing and unberthing at various wharves, piers, buoys, etc. in Hong Kong under the influence of wind, current and tide.
- (vi) Manoeuvring behavior of the types of ships expected to be piloted and the limitations imposed by particular propulsion and steering systems.
- (vii) Use and limitation of various types of tugs.
- (viii) The bridge equipment and navigational aids used for navigation, i.e. radar, Automatic Identification System (AIS), Electronic Chart Display and

Information System (ECD IS), etc.

- (ix) Systems of radio navigational warning broadcasts in Hong Kong and the type of information broadcast.
- (x) International Regulations for Preventing Collisions at Sea 1972 as amended, port regulations and pollution prevention rules.
- (xi) Use of VHF in accordance with the International recognized standards.
- (xii) Hong Kong Merchant Shipping Notice, Hong Kong Merchant Shipping Information and Marine Department Notices (MDN). *See Note*
- (xiii) Handling emergency conditions, i.e. collision with other vessel grounding, loss of steering, loss of propulsion, failure of vital systems and automation etc. in a narrow channel or fairway.

Note

- (i) *Examination syllabus of class II pilots may be included in Class I examination.*
- (ii) *Candidates will be expected to achieve a higher standard in the oral examination than Class II candidates.*
- (iii) *Candidates will be required to produce their training record to the examiners, including record of any internal and external training and courses attended.*

**Class IIC Pilots
Examination Syllabus
(proposed 2016)**

Practical Examination

The practical examination should consist of two berthings of ships, comprising a bulker and a tanker, with LOA $>210\text{m}$ to $\leq 250\text{m}$.

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Class IIF Pilots
Examination Syllabus
(proposed 2016)

Practical Examination

The practical examination should consist of three berthings of ships, comprising a bulker, a tanker and a container, with LOA >100m to ≤160m.

Written Examination

- (i) Knowledge of Pilotage Ordinance (Cap. 84) and the Berthing Guidelines.
- (ii) Navigational knowledge of the Hong Kong waters:
 - (a) Tidal streams, depths and shoals throughout Hong Kong waters.
 - (b) Characteristics of all lights, buoys, beacons, bridge lighting system and harbour facilities throughout Hong Kong waters.
 - (c) Depths and scope of berth at all Government mooring buoys.
 - (d) Limits of local pilotage areas including prohibited areas, anchorages and areas of restriction of any kind.
- (iii) Knowledge of ship handling:
 - (a) Berthing and unberthing at various wharves, piers, buoys, etc. in Hong Kong under the influence of wind, current and tide.
 - (b) Manoeuvring behaviour of the types of ships expected to be piloted and the limitations imposed by particular propulsion and steering systems.
 - (c) Precautions to be taken when passing close to other vessels underway or at moorings.

- (d) The effects of and the uses to which transverse thrust may be put. The effects when used in conjunction with a bow thruster.
 - (e) Turning short round. The use of the anchor when manoeuvring or berthing.
 - (f) Use and limitation of various types of tugs.
 - (g) Precautions to be taken when using lines to mooring buoy.
- (iv) Relationship with Master:
- (a) Information which pilot should obtain from Master upon boarding e.g. Handling characteristics of ship, type of cargo (D.G.Etc.), damage to ship which might affect handling.
 - (b) Information which pilot should offer to Master upon boarding e.g. Preparations for mooring berthing, anchoring, signals required, use of VHF etc.
 - (c) Advice to Master riding out typhoons in Hong Kong harbour or anchorages.
 - (d) Undue interference from Master.
 - (v) Handling emergency conditions, i.e. collision with other vessel grounding, loss of steering, loss of propulsion, failure of vital systems and automation etc. in a narrow channel or fairway.

Oral Examination

A comprehensive knowledge of:

- (i) Syllabus contained in the written examination
- (ii) The bridge equipment and navigational aids used for navigation, i.e. radar, Automatic Identification System (AIS), Electronic Chart Display and Information System (ECDIS) etc.

- (iii) Systems of radio navigational warning broadcasts in Hong Kong and the type of information broadcast.
- (iv) International Regulations for Preventing Collisions at Sea 1972 as amended, port regulations and pollution prevention rules.
- (v) Use of VHF in accordance with the International recognized standards.
- (vi) Hong Kong Merchant Shipping Notice, Hong Kong Merchant Shipping Information and Marine Department Notices (MDN). *See Note*
- (vii) Collection of evidence in incidents.

Notes

Candidates will be required to produce their training record to the examiners, including record of any internal and external training and courses attended.