

PILOTAGE ADVISORY COMMITTEE

Training, Assessment and Examination Arrangements for Apprentice and Class II Pilots

Purpose

The purpose of this paper is to seek members' endorsement on the proposed training, assessment and examination arrangements for apprentice and Class II pilots. The arrangements are prepared under the framework, which is attached at *Annex I*, endorsed in the Pilotage Advisory Committee ("PAC") meeting held on 18 January 2013.

Background

2. Under the Pilotage Ordinance (Cap. 84), ships of 3 000 gross tonnage or over visiting Hong Kong shall under the pilotage of a licensed pilot or pilots to ensure their safe navigation within Hong Kong waters.¹ At present, there are 109 pilots licensed by the Director of Marine in the capacity of Pilotage Authority to provide pilotage services.

3. Pilotage service is provided according to the length of vessels to which a licensed pilot could serve. Under the Pilotage Order (Cap. 84C), there are two Classes of pilot, i.e. Class I and Class II. Class II is further sub-divided into Class IIA, IIB, IIC and IID at present.² A pilot with a Class I licence could pilot a vessel of any length, whereas a pilot with Class IIA, IIB, IIC or IID licence could only pilot vessels with lengths not exceeding 260 metres, 220 metres, 165 metres or 150 metres respectively. Pilots are required to accumulate the required experience for advancement from one class to the next.³

4. At present, apprentice pilots are required to attain the experience,⁴ attend a written examination and an oral examination when progressing to a Class IID pilot. For progressing up to other classes of Class II pilots, apart

¹ Section 10C and item 1 of Schedule 1 to Cap. 84.

² Para. 5 and Schedule 2 to the Pilotage Order (Cap. 84C).

³ Para. 6 and Schedule 3 to Cap. 84C.

⁴ Para. 4 and Schedule 1 to Cap. 84C.

from attaining the experience,⁵ the Hong Kong Pilots Association Ltd. (“HKPA”) has also provided in-house training and assessments to Class II pilots before they further proceed to the next pilotage Class.

5. The existing examination syllabuses for all classes of Class II pilots are attached at *Annex II*. The syllabus framework was endorsed in the PAC meeting held on 30 June 2005.

Amendment to Class II Pilots

6. As a result of the international shipping trend of using bigger vessels for economy of scale, the length of vessels calling at Hong Kong has been increasing over the years. Some ultra-large container ships calling at Hong Kong can be close to 400 metres. As longer vessels require more skills and experience to operate, in order to allow pilots to acquire the necessary experience in handling larger vessels in a progressive manner, the PAC has decided to add two more levels of Class II pilotage, i.e. Class IIE and IIF.⁶ The legislative amendment to the Pilotage Order (Cap. 84C) is being processed to effect the above changes and is anticipated to be completed by the end of this year. The proposed amendments do not have retrospective effects. Pilots who have registered as Class II pilot before commencement of the new legislation will continue to progress in accordance with the old scale with four levels at Class II before advancing to Class I pilot. The proposed new scale with six levels of Class II pilotage will only apply to those who are registered as Class II pilot after commencement of the Amendment Order.

7. To effect the enhancement as mentioned in paragraph 6 above, experience required for different pilotage classes, as well as the length of vessels to which different pilotage classes could command, need to be amended. The proposed training, assessment and examination arrangements for Class II pilots are at *Annex III*.

8. The Marine Department (“MD”) has discussed with the HKPA the proposed arrangements of training, assessment and examination for all classes of pilots in a series of meetings held between mid-2015 and April 2016. The matters were also discussed in two PAC Working Group (“PACWG”) meetings held on 14 December 2015 and 15 April 2016.

⁵ Schedule 3 to Cap. 84C.

⁶ At its meeting on 18 January 2013.

9. As regards training, assessment and examination arrangements for Class 1 pilot, the arrangements have yet to be agreed by MD and HKPA. The PACWG meeting held on 15 April 2016 agreed that the arrangements for upgrading to Class I pilot could be submitted separately at a later stage. It is anticipated that the first batch of applications for upgrading to the new Class I pilot would not be raised before 2022 taking into account that it would take at least six years for an apprentice pilot to be upgraded to a Class I pilot.

Syllabuses for Class II Pilots

10. In comparison with the current examination system, the proposed arrangements for Class II pilot in future are more structured, comprehensive and transparent. Pilots are required to attend simulation training, practical vessel training, practical assessment, practical examination, oral examination, and/or written examination at different stages throughout the career path from apprentice to Class IIA pilot. Pilots are also required to attain the required experience stipulated in the Pilotage Order (Cap. 84C). Having deliberated the proposal, the PACWG meeting held on 15 April 2016 endorsed the training, assessment and examination syllabuses for the new six-level structure of Class II pilot as detailed in *Annex IV*.

Advice sought

11. Members' comments and endorsement are sought on the proposed arrangements for training, assessment and examination at *Annex III* and the examination syllabuses at *Annex IV*.

Pilotage Unit
Port Control Division
Marine Department
June 2016

Training, Assessment and Examination Arrangements
endorsed in PAC meeting held on 18 January 2013⁷

Appendix

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) 2 practical vessel-training 1 practical assessment by HKPA 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 Examination (by PAC members) & Written Examination

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.

⁷ Retrieval from Appendix to minutes of PAC meeting held on 18 January 2013 at http://www.mardep.gov.hk/en/aboutus/pdf/pac_m130118.pdf

Syllabus for Class II Pilots endorsed in PAC Meeting held on 30 June 2005⁸
(Appendix IV of PAC Paper No. 4/2005 (revised version, June 2005))

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.

⁸ Retrievable from Appendix 4 to PAC Paper No. 4/2005 at http://www.mardep.gov.hk/en/aboutus/pdf/pacp04_05.pdf

- (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.*

Proposed Arrangements for Training, Assessment and Examination of Class II Pilots⁹
(June 2016)

	Apprentice To IIF	IIF To IIE	IIE To IID	IID To IIC	IIC To IIB	IIB To IIA
Simulation Training (MD & Pilots)	1	1	1	1	1	1
Practical Vessel Training (Pilots)	-	2	2	2	2	2
Practical Assessment (Pilots)	3	1	1	-	1	1
Practical Examination (MD & Pilots)	1	-	-	1	-	-
Oral Examination (PAC)	1	-	-	-	-	-
Written Examination (MD)	1	-	-	-	-	-
Experience required	Schedule 1 to Cap.84C	Schedule 3 to Cap.84C	Schedule 3 to Cap.84C	Schedule 3 to Cap.84C	Schedule 3 to Cap.84C	Schedule 3 to Cap.84C

Acronyms

MD – Marine Department

PAC – Pilotage Advisory Committee

Pilots – Hong Kong Pilots Association Ltd.

⁹ Comments from members of the Pilotage Advisory Committee Working Group at the meetings of 14 December 2015 and 15 April 2016 have been incorporated.

Applicant	Maximum Length	Training, Assessment and Examination for Applying for Pilot's Licence (Class IIF)	
Apprentice	Not applicable	Simulation training (MD and Pilots)	Simulation training conducted by MD and Pilots.
		3 practical assessments (Pilots)	Piloting & berthing a ship of any type with LOA from >80m to ≤160m on 3 occasions.
		1 joint practical examination (MD and Pilots)	Piloting & berthing a ship of any type with LOA from >80m to ≤160m on 1 occasion.
		Oral examination (PAC)	As proposed in <i>Annex IV</i> to this paper.
		Written examination (MD)	As proposed in <i>Annex IV</i> to this paper.
		Experience required	As stipulated under Schedule 1 to Cap. 84C.

Pilot Class	Maximum Length	Training, Assessment and Examination for Upgrading to Class IIE	
IIF	160m	Simulation training (MD and Pilots)	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 or a length appropriate to the role played in various locations within HK waters.
		2 practical vessel-training (Pilots)	Piloting & berthing a ship of any type with LOA from >160m to ≤180m on 2 occasions.
		1 practical assessment (Pilots)	Piloting & berthing a ship of any type with LOA from >160m to ≤180m on 1 occasion.
		Experience required	As stipulated under Schedule 3 to Cap. 84C.

Pilot Class	Maximum Length	Training, Assessment and Examination for Upgrading to Class IID	
IIE	180m	Simulation training (MD and Pilots)	Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels length from >180m to ≤210m or a length appropriate to the role played in various locations within HK waters.
		2 practical vessel-training (Pilots)	Piloting & berthing a ship of any type with LOA from >180m to ≤210m on 2 occasions.
		1 practical assessment (Pilots)	Piloting & berthing a ship of any type with LOA from >180m to ≤210m on 1 occasion.
		Experience required	As stipulated under Schedule 3 to Cap.84C.

Pilot Class	Maximum Length	Training, Assessment and Examination for Upgrading to Class IIC	
IID	210m	Simulation training (MD and Pilots)	Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels length from >210m to ≤ 250m or a length appropriate to the role played in various locations within HK waters.
		2 practical vessel-training (Pilots)	Piloting & berthing a ship of any type with LOA from >210m to ≤250m on 2 occasions.
		1 joint practical examination (MD and Pilots)	Piloting & berthing a bulker or tanker ship with LOA from >210m to ≤250m on 1 occasion.
		Experience required	As stipulated under Schedule 3 to Cap.84C.

Pilot Class	Maximum Length	Training, Assessment and Examination for Upgrading to Class IIB	
IIC	250m	Simulation training (MD and Pilots)	Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels length from >250m to ≤300m or a length appropriate to the role played in various locations within HK waters.
		2 practical vessel-training (Pilots)	Piloting & berthing a ship of any type with LOA from >250m to ≤300m on 2 occasions.
		1 practical assessment (Pilots)	Piloting & berthing a ship of any type with LOA from >250m to ≤300m on 1 occasion.
		Experience required	As stipulated under Schedule 3 to Cap.84C.

Pilot Class	Maximum Length	Training, Assessment and Examination for Upgrading to Class IIA	
IIB	300m	Simulation training (MD and Pilots)	Simulation training should comprise of at least 6 exercise scenarios, include piloting, berthing, anchoring and crisis management of vessels length from >300m to ≤ 350m or a length appropriate to the role played in various locations within HK waters.
		2 practical vessel-training (Pilots)	Piloting & berthing a ship of any type with LOA from >300m to ≤350m on 2 occasions.
		1 practical assessment (Pilots)	Piloting & berthing a ship of any type with LOA from >300m to ≤350m on 1 occasion.
		Experience required	As stipulated under Schedule 3 to Cap.84C.

Proposed Examination Syllabuses for Class II Pilots¹⁰
(June 2016)

For amending from Apprentice Pilot to Class IIF Pilot

Practical Examination

The practical examination should consist of one berthing of a ship of any type with LOA from >80m to ≤160m to any berth as appropriate.

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; and
 - (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;

¹⁰ Comments from members of the Pilotage Advisory Committee Working Group at the meetings of 14 December 2015 and 15 April 2016 have been incorporated.

- (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; and
 - (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.), defect or damage to ship which might affect ship 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; and
 - (d) Undue interference from Master;
- and
- (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.

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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 Notes and Marine Department Notices (MDN); and
- (vii) Collection of evidence in incidents.

Other Requirements

The candidate is required to produce the following training records¹¹ to the Pilotage Authority:

- (i) Appropriate experience as required under Schedule 1 to Cap.84C;
- (ii) Simulation training;
- (iii) 3 practical assessments; and
- (iv) Any other training and courses attended.

¹¹ Para. 8 of Cap. 84C.

***For amending from Class IIF to Class IIE Pilots
And from Class IIE to Class IID Pilots***

The candidate is required to produce the following training records to the Pilotage Authority:

- (i) Experience required under Schedule 3 to Cap.84C;
- (ii) Simulation training;
- (iii) 2 practical vessel training;
- (iv) 1 practical assessment; and
- (v) Any other training and courses attended.

For amending from Class IID to Class IIC Pilot

Practical Examination

The practical examination should consist of one berthing of a bulker or a tanker ship with LOA >210m to ≤250m to any bulker/tanker berth as appropriate.

Other Requirements

The candidate is required to produce the following training records to the Pilotage Authority:

- (i) Experience required under Schedule 3 to Cap.84C;
- (ii) Simulation training;
- (iii) 2 practical vessel training; and
- (iv) Any other training and courses attended.

***For amending from Class IIC to Class IIB Pilots
And from Class IIB to Class IIA Pilots***

The candidate is required to produce the following training records to the Pilotage Authority:

- (i) Experience required under Schedule 3 to Cap.84C;
- (ii) Simulation training;
- (iii) 2 practical vessel training;
- (iv) 1 practical assessment; and
- (v) Any other training and courses attended.