YRKESHÖGSKOLAN NOVIA

Pilotage in Bandar Imam Khomeini of Iran (B.I.K)

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Abstract:

The subject of this thesis is to explain and present a wide view to the reader about one of the Iranian largest ports where I was a pilot over there for six years starting in 2015. The thesis begins with the introduction of the port by giving general information about the port and jetties.

The thesis aims to find out the main challenges and issues from the pilot's point of view who perform their duties in the mentioned port and present a solution for their concerns as far as possible. The challenges have been divided into two main groups, safety matters, and operational issues.

The implementation has been done by presenting actual near misses and accidents statistics which have happened in the harbor and the possible consequences for human life,

environment, and property have been assessed. A questionnaire has been used to obtain the safety and operational challenges which the pilots who maneuver in the port explained as the main matters.

The general information about the port has been extracted from different resources such as the Iranian port and shipping organization database, Khure Musa pilotage guideline, etc., Safety information has been obtained from the Iranian Pilot Association internal bulletin. However, the information used in the operational concepts is mainly based on the pilot's experiences maneuvering the ships in the port.

This thesis has led to practical ways to minimize the risks to the safety of the pilots as the major concern of the author and reduce the operational dangers in the mentioned port.

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1. Introduction

Guiding the ship in the coastal area and the harbor area is performed with the help of pilots and requires the accuracy of vision, high recognition power, vigilance, and constant attention of the bridge team. In the open sea, where there is no risk of getting aground or encountering underwater obstacles, navigation can be done with patience and composure, away from haste. The situation is very different in the vicinity of the coast or the area of limited and shallow waters. An error that is considered insignificant in the open sea might have severe consequences in the harbor area.

Nowadays, the duty of the ship's pilots is no longer limited and exclusive to providing advice and counseling, but steering the ship is completely entrusted to him, that is, a task that becomes more difficult day by day with the increase in the size and technical complexity of new ships.

In addition to ensuring the safety of ship navigation, pilotage is a type of port safety system to protect waterways and port facilities, and it is one of the services that are performed to protect public interests and safety. To achieve this purpose, in addition to providing dynamic and independent assistance to the ships, the pilot also provides necessary and useful information about the traffic of ships in the surrounding area and information related to the preservation of the marine environment.

1.1 Purpose and problem statement

The main purpose of the thesis is to answer the question: “When does a pilot in the B.I.K feels unsafe and why?” Additionally, to figure out a series of practical solutions to enhance the safety of the pilotage operation in B.I.K.

1.2 Theoretical starting point and Theoretical background

Specifying the wind and current impact mechanism and the effect of wind and current has been assumed to be based on experiments on different sizes of ships. This assumption could be tested by the calculation of hydrodynamic forces and moments working on the ship's hull. However, the mathematical formulas and equations have been avoided. Besides, the SOLAS regulation was reviewed for safe pilot transfer. Additionally, theories of ship handling have been read. The guideline for the pilotage in the B.I.K and Khur e Musa has been taken into account as the theoretical background and the hand notes of the B.I.K pilots were found so interesting and I tried to use them in elaborating the current and tidal stream in B.I.K

1.3 Similar studies

There are a few similar studies in the area about the current characteristics of the jetties in the local language as below:

- Effect of the tidal stream in the dredging operation in the khure musa (By: Capt. Abdoli 2011
- Effect of current on the ship in docking, and undocking operation in the eastern jetties of B.I.K (By: Capt. Vatankhah 2002)

1.4 Methods and procedure

During the different stages of research, five series of questionnaires have been sent to the active and retired pilots of the B.I.K via e-mail (See appendices; table No.9 for the details of questionnaires). Since the B.I.K pilots work on 15 days of On/Off rotation, it took a month to get answers back in each series of questionnaires. The results have been analyzed and presented as graphs and charts.

2. Bandar Imam Khomeini (B.I.K)

Below, there are a picture and table demonstrating the general view and information about the B.I.K port of Iran.

Figure1. B.I.K harbor in a quick glance (B.I.K pilotage guideline)

Table 1. General information of B.I.K port

Area	5500 Hectares
Location	North west of the Persian Gulf
Cargo operation capacity	54.5 Million Tons per year
Indoor warehouse area	522000 square meter
Outdoor warehouse area	2100000 square meter
Container terminal capacity	700000TEU
Maximum depth of jetties	13.5meters
Number of the jetties	38 + 2 + 7 (47 in total)
Internal railway length	120 km
Distance from capital (Tehran)	850 km

(B.I.K pilotage guideline)

2.1 The history of the port

Meanwhile to the construction of the country's national railway in 1928, two wooden pier posts were built in the northwest of the Persian Gulf and at the end of the Khure Musa waterway (with a geographic location of 30 degrees 25 minutes north and 49 degrees 5 minutes east). After some time, it was called Shapur Port and three years later it became the most important hub for the importing and exporting of goods. In 1973, the residents of the area moved from the docks to Sarbandar (the port city of Imam Khomeini and the ground was prepared for the further development of the port. After the Iran revolution, this port was renamed to Imam Khomeini Port, and in 1982, with the approval of the Board of Ministers, it was officially named Imam Khomeini Port and established a new development Era.

Imam Khomeini Port started its transformation from the same two wooden docks and today, carrying out more than 35% of the country's maritime trade; it promises a sustainable development for the region through the transportation industry.

Imam Khomeini Port nowadays plays a role as one of the most important regional transportation hubs. After changing its legal regime from a normal port to a special economic zone in 2011, this port now forms the largest special economic zone in the country with an area of more than 11 thousand hectares.

2.2.1 Port restrictions:

Entry and exit to the harbor are done without restrictions during the day and night.
The priority to enter Khure Musa is with vessels that:
- Constrained by her draft and as a result, they have limited maneuverability, such as Panama Max and Cape size ships and tankers with deep draft (it means that tankers can pass through the channel only in full high tide conditions).

- They have a time limit in berthing, such as ships arriving at petrochemical and special docks
- They are limited in terms of speed, such as barges and tugboats that try to use the following current to get speed as much as possible.
- According to the determination of the Maritime Affairs Department and in terms of administrative requirements, they are given priority entry.

2.2.2 Maximum size:

- There is no limit for the length and width of the ship for traffic, but the maximum allowed draft is 14 meters.
- Ships with a draft of 11.2 meters can enter the port at any time. The entry of deeper drafts depends on the tidal condition. The maximum difference between the two tides is 5 meters.
- The depth of the Khure Musa channel at the lowest tide is 13 meters. (Chart datum)

2.3 VTS traffic guidance and control system

Vessels entering B.I.K Port have been covered by the VTS center since the beginning of the Light Vessel (First Buoy name) and benefit from VTS services, such as traffic information, vessel schedule, weather conditions, etc. Also, all vessels must contact the VTS center at two points and inform the VTS center of information such as position, speed, and approximate time of the vessel's arrival, and if other services are needed, they can call the VTS center on VHF channels 16 and 13.

2.3.1 Tugs

According to the need of the pilot, there is a towing service for docking and undocking. There are 11 tractor tugs with 1200, 2400, and 4400 horsepower. At least two tugboats are used for berthing or un-berthing. The tugboats are usually connected at sea pilot and harbor pilot changing ground.

3. Khur e Musa Bar

The entrance channel to the B.I.K port is called Khur e Musa bar in the local language and in the B.A Charts. The Khur has been defined in the local language as a narrow water stream that has been driven into the land by an external force (which is the tidal stream in the case of Khure Musa). In the following two slides, the satellite image and the British Admiralty chart of the B.I.K has been presented.

Figure2.Khure Musa satellite image (Google)

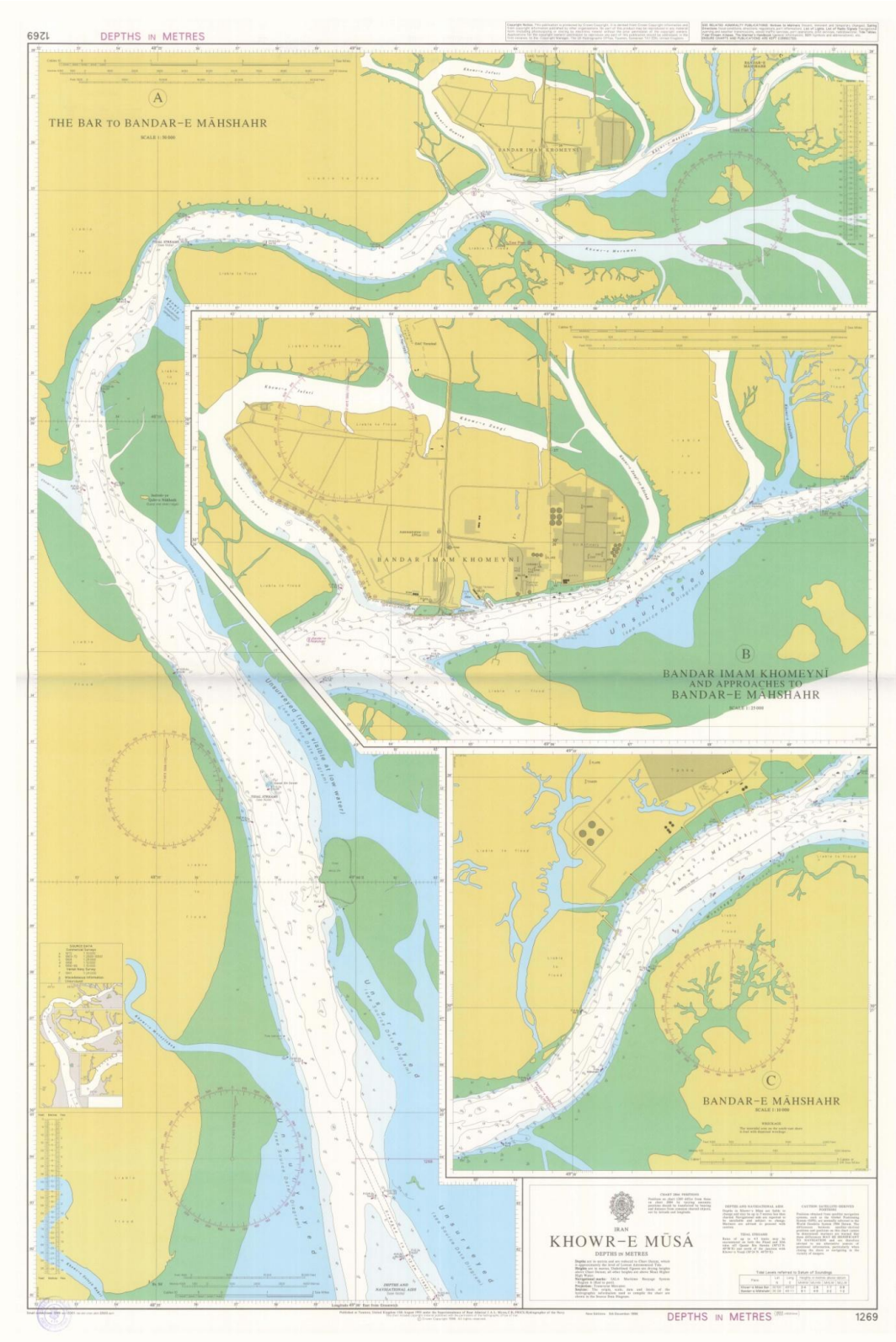


Figure3. Khure Musa British Admiralty Chart

3.1 General characteristics of Khure Musa channel

Usually, ports in the world are located in the area leading to the sea or at a short distance from the sea. The Khure musa channel with a length of about 70 miles is one of the longest navigable channels in the Persian Gulf, which has a special shape by having a side and diversion channel and makes sailors think that they can enter the river with fresh water from the sea.

During the navigation route, they often emphasize that this channel is the freshwater of the river, and their answer from the pilots is that this channel is natural and influenced by the force of the tides and the time difference between the main port (Khure Musa) and the secondary port (Bandar Imam). The main factor of the intensity of the flow in the channel has also been attributed to other factors such as its length and narrowness.

3.2. Issues concerning the B.I.K pilots

A questionnaire was designed and sent to 43 pilots who maneuver the ships in the B.I.K. to analyze their concerns. Additionally, figure 5 illustrates the percentage of the operation in that a pilot feels unsafe. It consists of the top five high risk operations which the B.I.K pilots mostly talk about them in all of the meetings and the result of the questionnaire is shown in below:

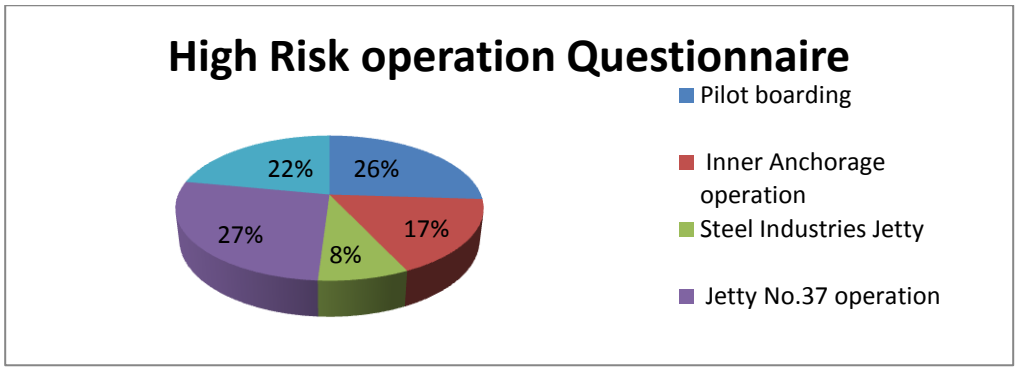


Figure4. Result of high risk operation questionnaire (Hani Kalashi 2023)

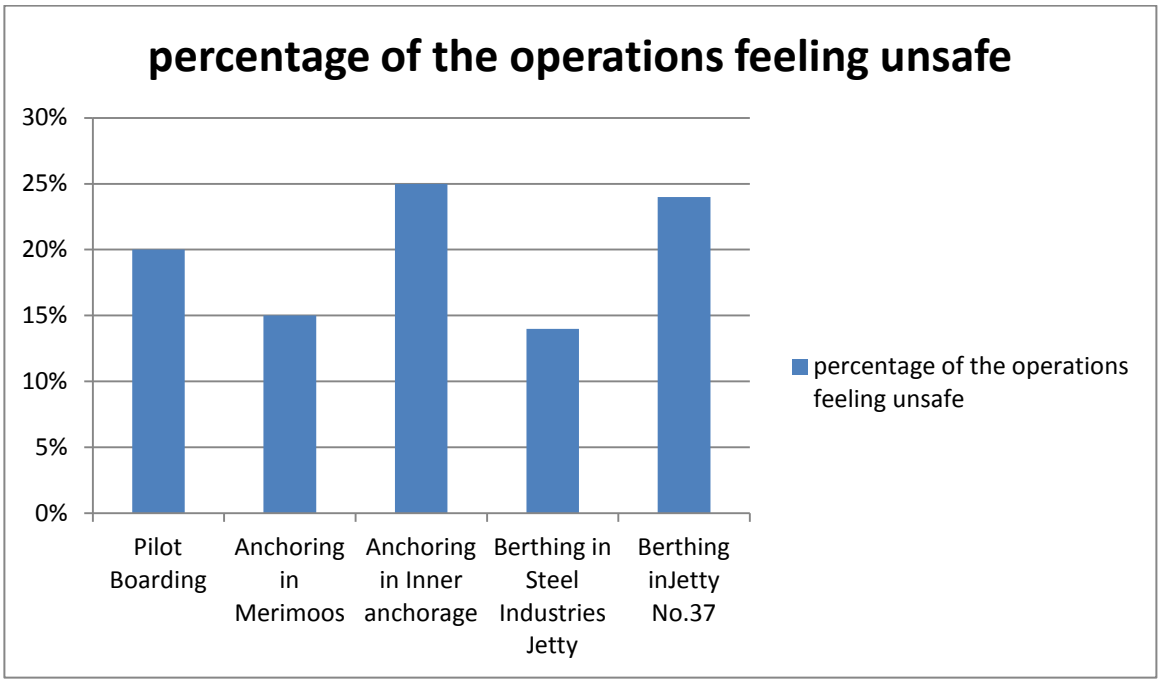


Figure5. Percentage of operations pilot feels unsafe (Hani Kalashi 2023)

Table 2 illustrates the number of accidents and incidents during six months starting from Aug.2022. The outstanding point is that the result of the questionnaire and the actual figures are almost running in the same way.

Table2. Accident and incident statistic Aug.2022 – Jan.2023

	Total Number of operation	Incidents	Accidents
Pilot Boarding	7680	78	1
Anchoring Merimoos	138	17	0
Inner anchorage	98	11	1
Berthing in Steel Ind	11	2	0
Berthing Jetty 37	120	16	2
Manuevering bar	2160	64	2

(B.I.K port accident Committee)

3.2. Navigation in Khure Musa channel

The outbound route has been edited on the B.A charts to elaborate pictorially the maneuvering in Khure Musa Channel. The recommended courses and distances have been written on the track during the outbound route. (Figure No.4-10)

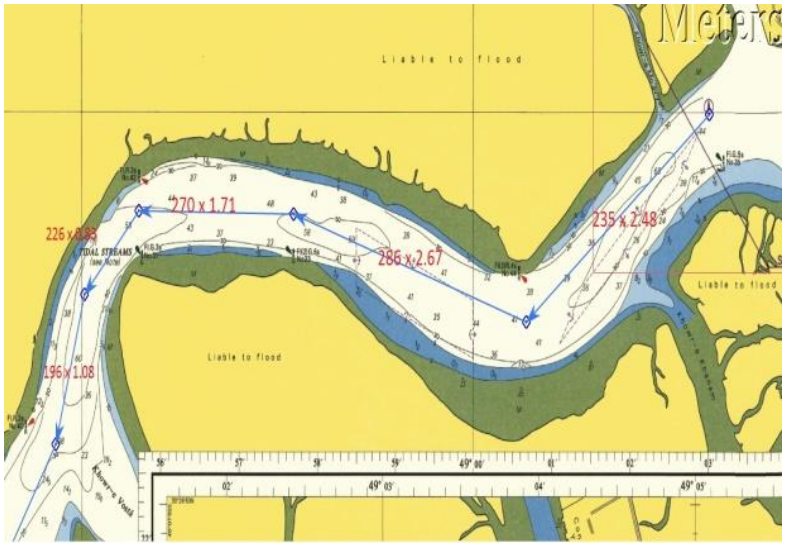


Figure6. Outbound courses and distances (Hani Kalashi 2023)

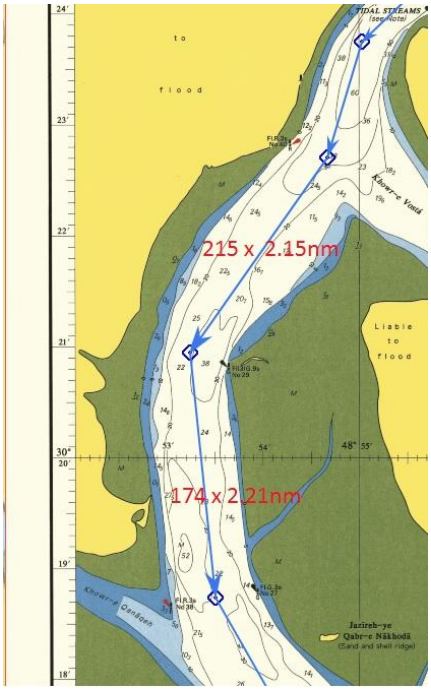


Figure7. Outbound courses and distances (Hani Kalashi 2023)

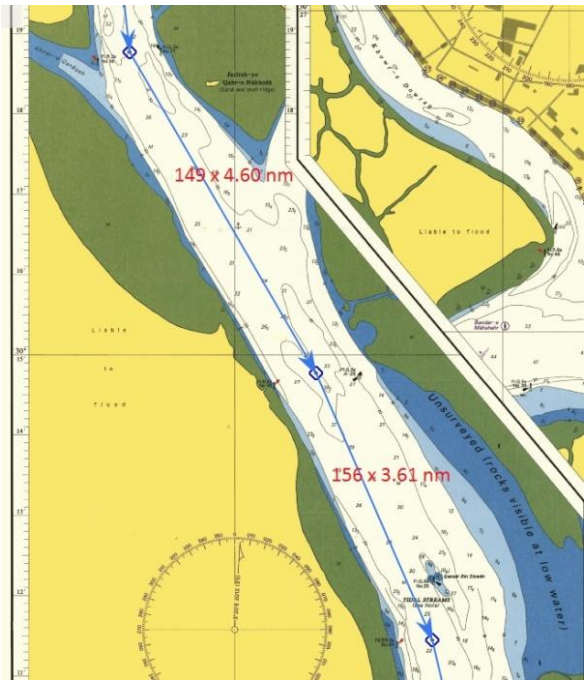


Figure8. Outbound route

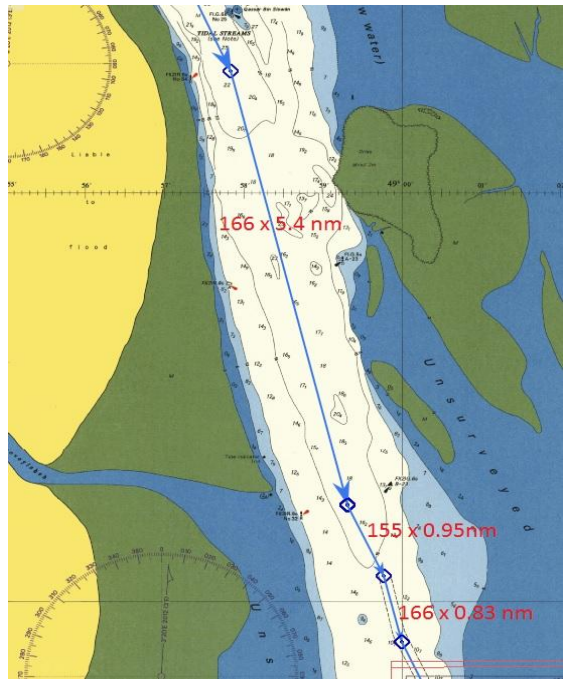


Figure9. Outbound route

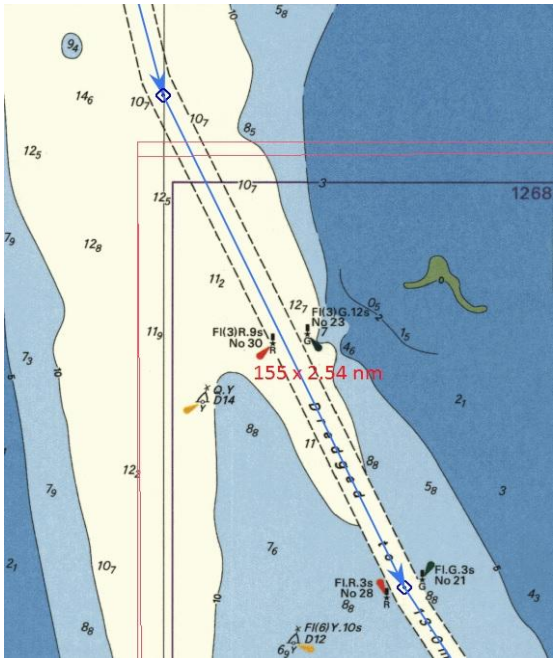


Figure.10 Outbound route

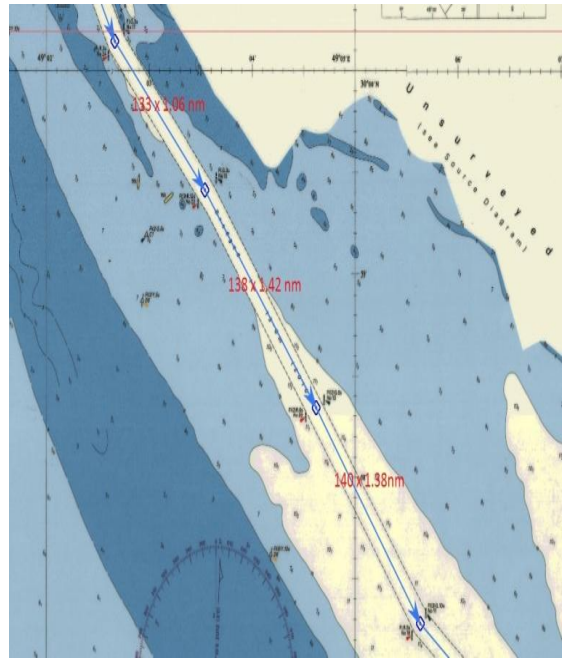


Figure.11 Outbound route

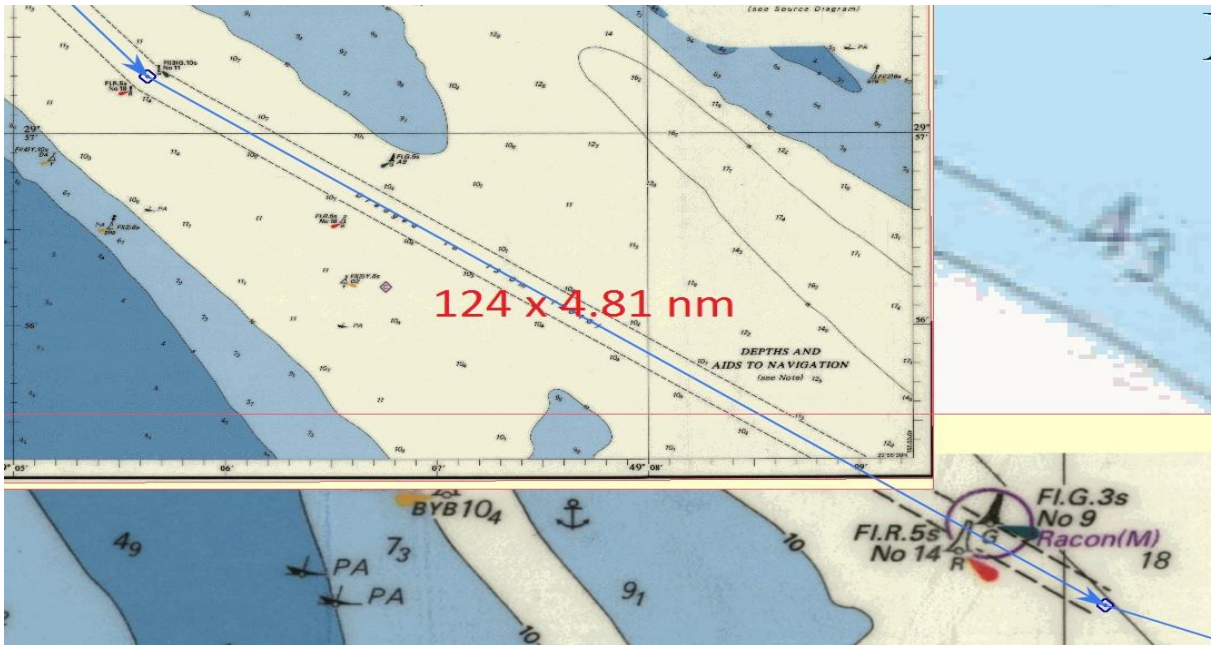


Figure12. Outbound route

3.3. The main issue is the severe current:

There is a strong current flow in the B.I.K harbor area and in the khur musa channel as well which makes hassle in all of the operations the average fall and rise of the water is about 3 meters and on the peaks touches 5.5 meters. Such a strong current flow in narrow areas acts as a water jet in the maneuvering aspects. Adding the effect of the wind which sometimes during the winter blows heavily and the operations should be done up to 24Knots.

Figure13. Most critical point for maneuvering in Khure Musa bar (Hani Kalashi)

One of the critical areas for the maneuvering of the ship in the B.I.K is the positions between bacon 18 and 26 as shown in the picture. Due to the large number of incidents happening in the area, the port authority has decided to initiate wreck removal. But, the pilots believe that it is not enough. They argue that even by removing the wrecks because the sea bed in the vicinity of the fairway is a hard stone, the navigation in the mentioned area is still high risk. Almost all of the pilots agree that if two tug boats are to be stood by 24/7 in the area as a standby in case of emergency, it will increase dramatically the safety of the navigation in the area.

On the other hand, having two tug boats in the area which is about 45 nautical miles away from the harbor will cost money and who will pay!?

Having researched to find a way to minimize the tug boats fee, I found that if the company providing the tug boat is registered inside the B.I.K free commercial zone, there will be low-cost fuel and low tax rate and insurance premium for the company leading the reduction in the running cost for the tug boats by 45%.

4. Pilot boarding

Requirements for pilot boarding arrangement have been well defined with the details in SOLAS regulation V/23 & IMO resolution A.1045(27) and in the bellow poster it has been illustrated pictorially.

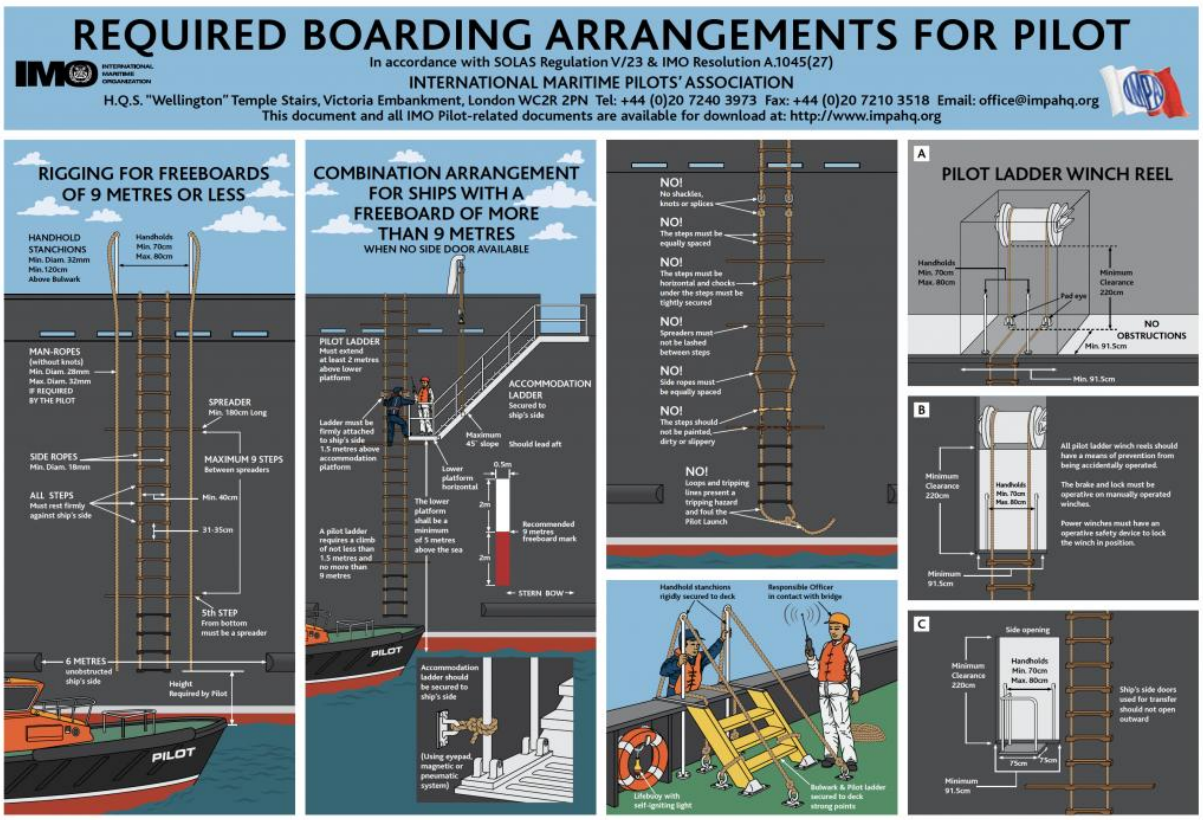


Figure14. Pilot boarding arrangement poster (SOLAS Regulation V/23)

4.1 B.I.K pilots point of view

But is it enough? The pilots working in the B.I.K region believe that it is not enough for the safety of the pilot while embarkation and disembarkation. There is a YouTube link in the references list, illustrating that the current SOLAS requirement is not sufficient for safe pilot boarding operations.

A specific questionnaire has been sent for the B.I.K pilots to ask their point of view about the pilot ladder:

Table3. Result of pilot boarding questionnaire

Question:	Yes	No
Do you feel absolutely safe while you are on the pilot ladder?	7%	93%
Do you think that present SOLAS requirement is enough for pilot boarding?	0%	100%
Is your own safety while getting onboard your biggest concern in your career	87%	13%

Hani Kalashi 2023

On one hand, the ships were obliged to rig only a pilot ladder if their freeboard is less than 9 meters. It means that a pilot shall climb up to 9 meters without any supportive tools and if some accident happens during the climbing, a pilot should be really lucky to not lose his/her life. (Se YouTube link in the reference list) Although the port authorities can request the ships which call a port to arrange some additional safety measures there is no strict rule in the international regulation to support the port authority to force the ships to utilize specific arrangements for the pilot boarding operations.

On the other hand, in some ports, using an unsafe method of boarding is nowadays a common practice for that area. In other words, due to the lack of supportive rules, the pilots prefer to embark on a ship in a comfortable way such as a gangway which is easier also for the ship's crew to prepare for pilot boarding from the sea. However, the consequences of an accident while boarding a ship using a gangway with a too-sharp angle is too severe.

4.2 Combined life jacket and safety harness

I have introduced using safety hardness in the pilot boarding operation. The principle of such an idea is that there should be standard safety hardness with some special measures taken into account:

-A life jacket combined with a safety harness with special material which can resist the seawater and is easy to clean which should be available for the pilots in the pilot boats. I believe the pilotage companies can provide it to enhance the safety of their employees. However, there should be mandatory regulations that force the pilotage companies to do so and technical definitions about the material and characteristics of the hardness which can be done by SOLAS and classification society's specialists.

-Onboard a vessel, a special rope with sufficient length to be connected from one end to the safety hardness and on the other end to be connected to a manual hydraulic winch to make it possible for adjusting the length of the rope. In other words, the length of the rope should be reduced by climbing the pilot up.

-Onboard a ship, additionally, there should be approved training manuals for the crew member to get familiar with how the whole system works.

-Onboard a ship, and some certified person to be available to use the system.

Although it will cost the shipping companies, considering the risk to the life of the pilots and the compensations which to be paid by the insurance company to the victim i.e. pilot, and any delay in the shipping operation, it is clear that in the long term, it will save a lot of costs for the concerned parties.

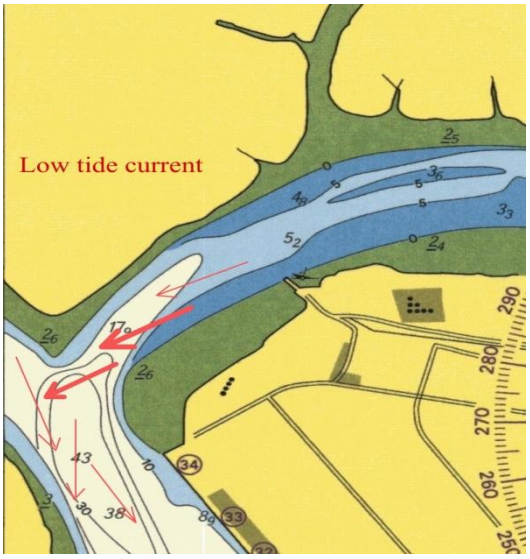
Figure15 & 16. Safety harness and life jacket

5. Jetty No 37

One of the biggest issues to deal with in the B.I.K port harbor operation is the berthing and unearthing of the tankers in jetty No.37. The reasons which make this quay challenging operation for the pilots are mentioned below:

5.1.1 Strong current

Below, the capture pictorially depicts the current in the area of the jetty No.37. The issue worsens if we consider the rate of the current which touches the figures of 4 knots due to the too-narrow ending at the end of the channel.



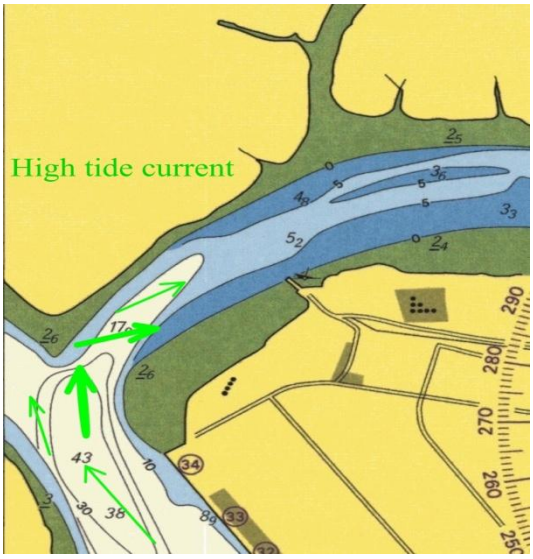


Figure16 & 17. Current direction in Jetty No.37 (Thicker arrow = stronger current)

5.1.2 Too narrow area

As shown in the picture, the width of the navigable water in the channel in the different parts is 280 meters and 150 meters and the L.O.A of the ships which have been berthed in the jetty No.37 sometimes reaches 190 meters.

As a general rule in the B.I.K, the tankers should be berthed always face to the sea. It means that the heading of the tankers should be in such a way that if any unforeseen emergency happens to a tanker or in the port facilities, it should be possible to cast off the ship and leave the harbor area as quickly as possible.

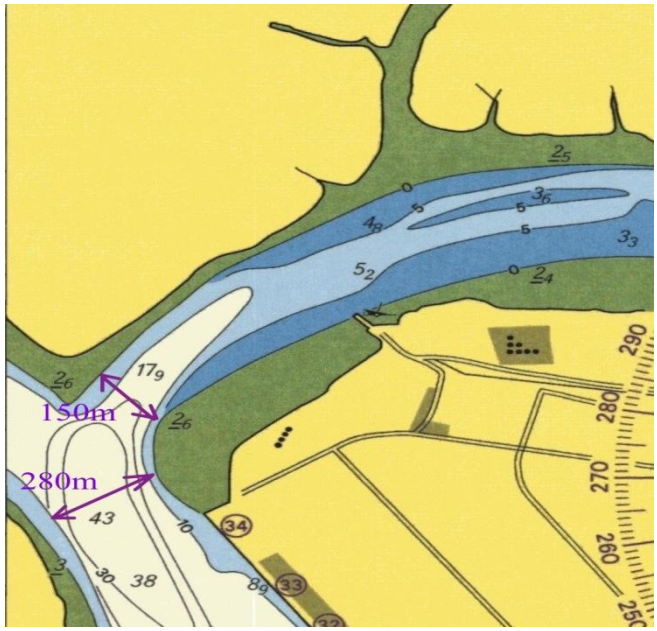


Figure 18. Channel width in Jetty No.37

5.2 Still feel unsafe!

Considering all the above-mentioned leads to getting the ship to the jetty and un-berth the vessel only during the high water when the pilot can use the effect of current to control the

vessel. This is the common practice that the pilot of Jetty No.37 performs. But, why do B.I.K pilots still fill unsafe?!

As per the result of the questionnaire, they fill unsafe because although maneuvering during the high tide reduces the risk of operation, in addition to the rate of the current being too high and there not any sufficient sea room, The machinery failure either on board of a ship or on the tug boats which is quite often, leads to feeling still unsafe.

A short interview has been driven with experienced pilots in B.I.K and all of them suggest that it is safer to dock the vessel only during the slag water meaning the last two hours before starting the low water. Therefore, the waiting time for the berthing will increase in some cases which the ship owners do not like it.

On the other hand, due to some miss-coordination, the ships are not able to send their ETA and ETD on a regular and accurate basis and it worsens the case.

It has been found that by having a unique coordination system between the different terminals such as the oil terminal, container terminal, dry bulk terminal, and petrochemical terminal; it is possible to optimize the waiting time for docking in the case of tankers.

6. Anchoring in B.I.K and Khur e Musa

There are three different series of anchor positions in the B.I.K area: outer anchorage, middle anchorage, and inner anchorage.

6.1.1 Outer anchorage area, Captain's maneuvering

There are two separate positions for the ships with dangerous goods onboard and the other ships. Since the outer anchorage area is located outside of the pilot boarding ground, dropping the anchor by the pilots in the outer anchorage is not common.

There are five official anchor positions nominated for the ships which call B.I.K with D.G onboard as below:

Table4. Anchor positions for ships with dangerous goods

1	29 50.10 N 049 16.65 E	3	29 47.46 N 049 19.20 E	5	29 45.28 N 049 19.40 E
2	29 49.15 N 049 15.66 E	4	29 46.02 N 049 20.90 E		

B.I.K Pilotage Guideline

Figure19 & 20. Dangerous good anchorage area (B.I.K VTS)

Positions for the ships which do not have D.G onboard have been nominated as below:

Table 5. None-D.G anchor Positions

1	29 53.86 N 049 10.00 E	3	29 49.64 N 049 12.70 E	5	29 53.50 N 049 11.95 E
2	29 52.85 N 049 08.47 E	4	29 51.28 N 049 14.78 E		

Figure 21. None- DG anchor positions (B.I.K VTS)

6.1.2 Middle Anchorage Area, The safest positions

Because of the depth of water in the middle anchorage area which is around 20 meters and the width of the channel which is 0.8 – 1.0 nautical mile, this area is known as the safest area for the dropping anchor by the pilots. Additionally, the margins between the anchor positions are around five cables and the sea bed is mostly mud. All of the mentioned factors make the middle anchorage a really safe place to drop the anchor. The distance from the harbor to the middle anchorage is 14 – 20 nautical miles.

Table 6. Middle anchorage positions

1	M 1	30 70.16 N 048 57.30 E	4	M 4	---- -----	7	M 7	30 15.06 N 048 56.30 E
2	M 2	30 08.31 N 048 58.64 E	5	M 5	30 13.35 N 048 57.30 E	8	M 8	30 15.67 N 048 56.00 E
3	M 3	30 09.51 N 048 58.46 E	6	M 6	30 14.10 N 048 56.89 E	9	M 9	30 16.40 N 048 55.55 E

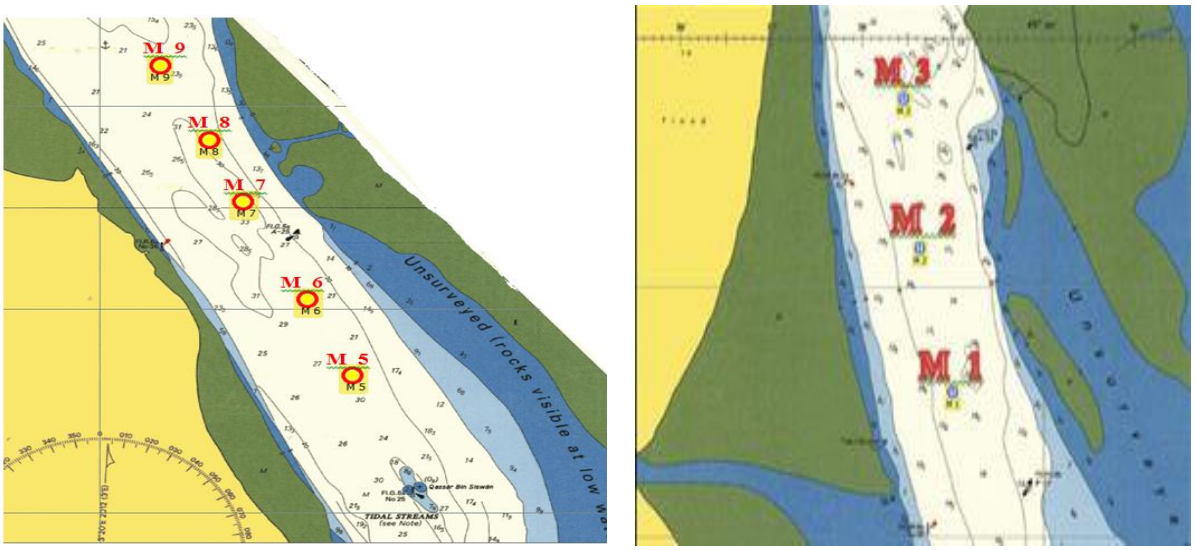


Figure22. Middle anchorage positions (B.I.K VTS)

6.1.3 Inner anchorage, Problematic!

There are 7 anchor positions in B.I.K harbor area as shown in the pictures.

Table 7. Inner anchorage positions

1	I 1	30 23.67 N 048 59.56 E	4	I 4	30 24.45 N 049 02.48 E	7	I 7	30 23.93 N 049 05.24 E
2	I 2	30 23.65 N 049 01.36 E		I 5	30 24.47 N 049 04.37 E			
3	I 3	30 24.00 N 049 01.82 E	6	I 6	30 24.20 N 049 04.80 E			

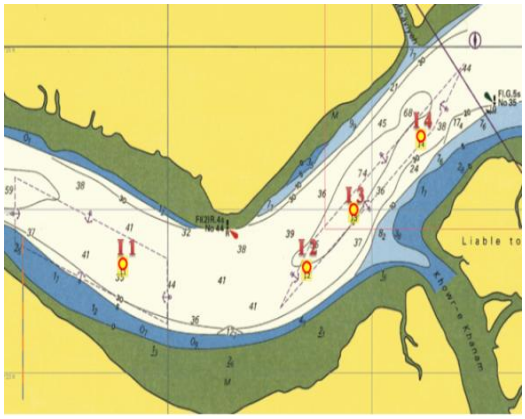


Figure 23. Inner deep anchorage

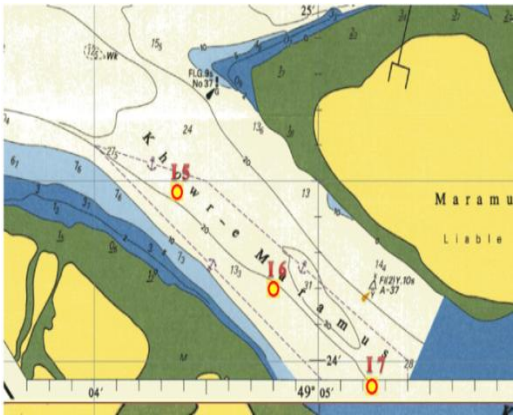


Figure 24.Merimoos anchorage

6.2 Anchoring in inner anchorage

According to the questionnaire, dropping the anchor in the inner anchorage is one of the operations in which usually the B.I.K pilots feel unsafe. Considering the depth of the water, we can split the positions into two groups; the first group is the positions named i1, i2, i3, and i4, and the second group is i5, i6, and i7.

6.2.1 Anchoring in i1 – i4, Deep anchorage

There are four anchor positions just before the pilot changing ground in the B.I.K harbor area where the average depth of the water is a bit more than 45 meters.

One on hand, due to the strong current and the limited sea room, B.I.K pilots have to drop anchor by gravity. If the port traffic factor is added to the issue, the case even is worsening. On the other hand, most of the ships calling B.I.K have company circular in such that they cannot let go of their anchor by gravity and they have to walk it back. To elaborate, around 20% of the anchoring operations in the i1 – 14 anchorage area face near misses such as dragging just after dropping the anchor or losing the correct position.

6.2.2 M/V Miami Pride anchor loss

Figure 25. M.V Miami pride (Old name)

On 11.Dec.2018, M/V Miami pride in loaded condition with the draft of 11.6 called B.I.K port. She took the pilot to proceed to the jetty but due to the fault in the operation department of the port, she got instruction from the port control to drop the anchor in the i2 position. Same story! Same challenge!

Pilot wanted to drop the anchor by gravity and the master preferred to walk it back. Finally, they agreed to drop by gravity and just a few minutes later, the ship lost her port anchor. The ship was detained and got off-hired for two weeks. The actual amount of the cost including the setting of a new anchor, anchor removal penalty, environmental compensation cost, and the off-hire days was around 1.7 million USD for the shipping company and P&I club. (B.I.K port accident assessment committee bulletin)

6.2.3 Anchoring in the i5 – i7 (Khure – Merimoos)

In the mentioned three positions, the depth of water is quite suitable for dropping the anchor by gravity and there is not any disagreement between the pilot and the master. The issue is the area is too narrow to squeeze three ships. Especially, during the change of the tide when the ships are not aligned with the direction of the shoreline, it seems there is no space to pass an anchored ship in i5 and proceed to the next positions i.e. i6 and i7.

6.3 Safer approach

A questionnaire has been sent to the B.I.K pilot about the below idea to minimize the risk of anchoring in the inner anchorage area and interestingly, 82 percent of the B.I.K pilots found it a practical solution to tackle the problem:

There should be a unique port management team which has the authority to receive the exact E.T.D of the outbound ships to plan the arrival of the ships in such a way that so far as possible avoiding the anchoring in the inner anchorage. Besides, ships that receive berthing prospects and get a pilot to proceed to the jetty shall have the flexibility to adjust their E.T.A. to harbor area for meeting the suitable tidal condition. In other words, the positions i1 – i4 shall be used only in case of an operational emergency such as an engine failure. Furthermore, the middle anchorage area which is about 18 n.m away from the harbor is a safe alternative for those ships that might wait for special tidal conditions or etc. Additionally, in the case of i5 – i7 anchor positions, three positions can be reduced to one to avoid any high-risk operation.

7. Examination

All of the introduced solutions to deal with the challenges have been discussed by the B.I.K pilots via examination questionnaire and the result has been presented below:

Table8. Thesis Final result questionnaire

Questions	Yes	No
Combined life jacket with safety hardness will improve the boarding safety	96%	4%
Using the stand-by tug boat in the main bar will reduce number of near misses	100%	0%
By reducing the number of anchor positions in the Merimoos, a pilot feel safer	81%	19%
Do you agree by eliminating the anchor positions in inner deep anchorage?	74%	26%
The operations in jetty No.37 shall be done in specific time	91%	9%

Hani Kalashi 2023

7.1 Relevancy assessment

All of the information collected in the text is in connection with the pilotage in Bandar Imam Khomeini of Iran. Although section 4 seems that is more general topic than a specific area, the writer believes that since the pilot boarding arrangement is the biggest challenge for the B.I.K pilots, it is quite relevant for the safety of the pilots in specific areas. However, it might be better to devote section 4 to another issue as obtained from the initial questionnaire.

7.2 Reliability assessment

The selection of the target society for the questionnaire was been done carefully and those who participated in the questionnaires were local marine professionals with quite long years of working experience.

Additionally, there is an organization in all Iranian ports whose main task is to assess and discuss the root cause in all accidents and incidents named the Accidents assessment committee. The statistics presented in the article were obtained from the data bank of the accident assessment committee of B.I.K port.

7.3. Discussion

Four main topics concerning the B.I.K pilot operations have been addressed in this thesis: pilot boarding arrangement, Berthing in a specific jetty, Anchoring in the inner anchorage, and maneuvering in the main bar.

To minimize the pilot boarding risk, a new combination of the life jacket and safety harness and its legal requirements has been introduced.

For dealing with the anchoring in inner anchorage and berthing in jetty number 37, it has been agreed that a unique port management system shall control all traffic and the data of all terminals shall be in such controlling system disposal.

For safe maneuvering in the main bar, one or two tug boats shall be stand-by in the area to assist the ship in case of engine or steering failure. The running cost of the mentioned tug boats can be compensated by the benefits of B.I.K Commercial free zone for the companies operating in the area.

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-Clark, I.C. (2009). Mooring and Anchoring Ships Vol 1. Principles and Practice (1th edition). London: The Nautical Institute.

- Guide to Port Entry, 2022 edition

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Video links:

https://www.youtube.com/watch?v=RMtfP7juKt0&t=116s

Appendices

-Detail of the Questionnaires

Table No.9 detail of questionnaires

Questions in E-mail No.1 (Recognizing the risks)
Q.1 What are the high-risk operations in B.I.K?
Q.2 Which one does include the highest risk?
Q.3 Which one does include the lowest risk?
Q.4 In how many percent of the boarding operations do you feel unsafe?
Q.5 In how many percent of the main bar passage do you feel unsafe?
Q.6 In how many percent of the Jetty No.37 operations do you feel unsafe?
Q.7 In how many percent of the anchoring operations in inner anchorage do you feel unsafe
Questions in E-mail No.2 (Main Bar Passage)
Q.1 What are the risks during the passage through the main Bar?
Q.2 What is the best way to minimize the risk?
Q.3 What are the consequences of an accident in the main bar?
Q.4 Do you think having a tug boat in the area will reduce the risk?
Q.5 Having a tug boat will cost. Who shall pay?
Q.6 Is it fair to divide the cost of the tug boat between the parties?
Q.7 Do you agree to get benefits from B.I.K economical free zone regulations to minimize the cost of the tug boat?
Questions in e-mail No.3 (Pilot Boarding)
Q.1 Why do you think it is one of the high-risk operations?
Q.2 At which point on the pilot ladder do you feel extremely unsafe?
Q.3 Do the weather and sea conditions affect your feeling of safety?
Q.4 If you fall in the water, how long does it take for you to get recovered and resume working?

Questions in e-mail No.3 (Pilot Boarding)-Continued
Q.5 Do you think the combined life jacket will boost your safety?
Q.6 Can you grade your answer to question No.5 by percentage?
Q.7 Do you think is it practical to use such a life vest while climbing the pilot ladder?
Q.8 How many percent of the ship owners will provide the required arrangement voluntarily?
Q.9 Does it require some new mandatory regulations?
Questions in e-mail No.4 (Jetty No.37)
Q.1 What are the difficulties of the operation in Jetty No.37?
Q.2 Which one of the factors is more annoying?
Q.3 Do you think the present pilotage guide-line covers all required safety matters?
Q.4 Do you agree to dock the ships only during slack water?
Q.5 How is it possible to dock the ships only during the slack water?
Q.6 The time is Money for the ship owners and port. How can we minimize the possible waiting time?
Questions in e-mail No.5 (Inner Anchorage Area)
Q.1 What are the issues in the inner anchorage area?
Q.2 Do you think the anchor positions are safe?
Q.3 Is the depth of water suitable for dropping anchor?
Q4. How often do you have challenges with the ship's master while dropping anchor?
Q5. Do you prefer to drop anchor by gravity or by winch?
Q.6 Do the ship's masters prefer to drop anchor by gravity or by winch?
Q.7 Do you agree to reduce the number of anchor positions in the Khure Merimoos?
Q.8 Is it practical to avoid anchoring in the Inner anchorage? How?
Q.9 Do you think the suggested solutions will reduce the number of accidents and incidents?