

## **KISH P & I LOSS PREVENTION CIRCULAR KPI-LP-100-2012** **(Precautions concerning Anchoring off Chittagong Port in Bangladesh)**

A recent article published by P&I Services in Bangladesh, has highlighted the various challenges facing vessels anchoring off the port of Chittagong.

Located near the mouth of the Sandwip channel the anchorages off Chittagong are subjected to strong tidal streams and currents averaging over 6 knots at spring tides, which may increase further when it has rained heavily inland. The strong tides and current, coupled with moderate to poor holding ground makes anchoring difficult. Masters may find they need to use a large scope of anchor cable when considering the limited water depth, and main engines should be maintained on standby during spring tides as it is possible that the anchor may drag. Strong winds, high seas and a long swell may also be experienced, making conditions more challenging still.

The anchorages can also be busy with vessels waiting to berth or engaged in cargo operations with lighters, making manoeuvring problematic. There are a number of collision cases reported in the anchorages off Chittagong where Masters have attempted to cross ahead of another vessel at anchor. The manoeuvring vessel in each case had not appreciated the strength of the tidal stream and current and was set down on to the anchored vessel, fouling its anchor cable and/or colliding with the other vessel. Masters should therefore not attempt to cross ahead of a vessel at anchor except under exceptional circumstances. If a crossing manoeuvre cannot be avoided, adequate clearance should be maintained to enable the crossing to be completed safely whilst considering the prevailing tidal stream, currents and wind. Low powered vessels should take particular care when manoeuvring in the anchorage.

Due to the heightened hazards at the anchorages off Chittagong port, Masters should also ensure that a close anchor watch is maintained for signs of the vessel dragging anchor, and a good lookout should be kept to monitor the movement of other vessels in the vicinity. Masters should not hesitate to take appropriate action in the event that a close quarters situation is developing or if there is risk of collision.

Masters and deck officers on vessels due to call at Chittagong are advised to read Mr. Zalal Uddin Ahmed's text "[Navigate Vessel Safely at the Chittagong Port \(Bangladesh\) Anchorage](#)" and be guided accordingly.

The Text has been extracted & inserted as Quote/Unquote in the following pages:

(BEARING IN MIND THAT THE NOTES ARE TO BE TREATED AS GUIDELINES ONLY & NO LIABILITY SHALL BE BORNE BY)

### Q U O T E

#### **NAVIGATE VESSEL SAFELY AT THE CHITTAGONG PORT (BANGLADESH) ANCHORAGE- by Zalal Uddin Ahmed**

The write up prepared to give detail idea as regards Chittagong port anchorage area, draft restriction, the types & strength of current / tide experienced, lightening operation, precautionary measures to avoid collision and local notices / warnings the local Port authority.

Bangladesh covers an area of 147,570 sq km, a little more than the size of Greece. It extends from 20°34N to 26°38N latitude and from 88°01E to 92°41E longitude. Maximum extension is about 440 km in the E-W direction and 760 km in the NNWSSE direction. The country is bounded in the south by the Bay of Bengal. Although Bangladesh is a small country, the length of the coastline is more than 580 km. Chittagong port is the premier port of Bangladesh, located 15km from open sea.

The port is situated on the banks of the Karnaphului River. The port limit of Chittagong port outer anchorage is bounded by area with radius of 5.6 nautical miles( on the west side) from Patenga light beacon at position Lat. 22 13.54 N Long. 91 48.2 E . All climatic / hydrographical information relating to CPA (Chittagong Port Authority) outer anchorage is being well documented and promulgated by various nautical publications.

CPA anchorage area is divided into three areas which follows: Anchorage A: the northern most anchorage for vessel's of more than 10 meters draught.

Anchorage B: in between anchorage "A" and "c", for vessels scheduled to enter the karnaphuli river within 24 hours.

Anchorage C: the southern most anchorage for lightering vessel's and other not scheduled to enter within 24 hours.

Areas outside the marked anchorage are considered to be off port limit. The shallow patch lies SW of the anchorage. This is the usual approach area for "A" and "B" anchorage. The minimum charted depth of 7.9 m lies in about two places over the shallow path. Most of the places having charted depth in excess of 8.5 m. The height of tide at low water and high water usually varies from 0.4m to 1.5m a 2.4 m to 4.6m respectively during the year.

The area outside the outer anchorage is not usual waiting place for vessels. In ward Transit from 1st arrival at KUTUBDIA Anchorage to A Anchorage need 3 / 4 hours duly piloting by vsi's Master or by Private Pilot if Master/Owners require.

From Anchorage to Jetty Berth need aprox 2 hours duly compulsory piloting by Port Pilot. Vessels drawing draught of less than 8.5 m usually approaches to Chittagong outer anchorage directly at any time. Vessels drawing draught between 8.5m to 9.5m also approaches to the outer anchorage directly depending on the time of arrival and height of tide. However vessels drawing draught over 9.5 m usually wait for the rising tide to approach Chittagong outer anchorage if arrives in falling tide.

The holding at Chittagong outer anchorage can be termed as fair, neither good nor poor.

Strong tide often render it necessary for vessels to pay - out extra length of cable. Spring tides at Chittagong Outer Anchorage are very strong (6 to 8 knots) and at times of FRESHETS, the rate may be more.

It is advisable to keep engines ready at all times during Spring tides, and maintain continuous and efficient anchor watches. Often, with vessel moving dead - slow ahead and the anchor dropped, stern movements are required to maintain sternway over the holding ground. Due to strong under water current at

Chittagong Outer Anchorage, anchor dragging by vessels, particularly vessels drawing relatively deeper fresh water draft, is a common phenomenon.

It is reported that a vessel with 9 shackles and a high holding power anchor in a charted depth of 12.4 meters, a vessel with 49,184 tons displacement, dragged anchor and required slow – ahead on the engines ( 8.0 knots ) to maintain her position .

The sea-bed at Chittagong Outer Anchorage is of soft mud is generally harmless in case of grounding. With Patenga Light - Beacon bearing more than about 055deg, the holding ground is soft mud and vessels are liable to drag anchor.

With the LIGHT- BEACON bearing less than 055deg, the holding ground is relatively firmer but great attention must be paid to the strength of the EBB tide, especially during the monsoon months. Also, vessels using the outer anchorage are liable to swing in one direction only at the change of the tidal streams ; if this occurs for more than a few tides , the anchor needs to be sighted regularly to avoid fouling .

Particular emphasis is made by the Port Radio Control and by the Agents not to pass ahead of other vessels at anchor due to strong current. The dragging line is 160deg and 340deg. It is because of this reason Ship Masters approaching Chittagong roads are advised not to attempt to cross bow of vessels anchored at close proximity or underway to avoid drifting on them resulting in probable collision / contact with them . In the event if making such an attempt becomes inevitable, Ship – Master may do so with caution by giving a wide berth to the vessel at anchor / underway considering the minimum velocity of the current being 6 knots and other marine factors. Vessels at the CPA outer anchorage needs to maintain a deck watch forward and aft.

The weather in Bangladesh is largely governed by the monsoon. The prevailing wind directions are from south to south east during the month of April through September. After taking easterly direction for a while, the wind turns to the northerly and north easterly directions, the latter prevail from November to January. During the month of February and March, winds turn via westerly direction back to the transition periods between monsoon and season in May, October and November, extreme of inclement weather like cyclones often occur with wind velocity in excess of 30 knots. The waves are generally low showing distinct relation with the wind. The wave's period vary between 3-4 seconds of waves of about 0.5 meters and about 6 seconds for waves of 2 meters.

During the months May to October, freshets are expected. Freshets are caused by the normal velocity of flow of EBB tide augmented by flow of additional volume of water that drains into the river Karnafully from the catchment areas. Freshets are expected when rainfall intensity reaches 200 mm in 24 hours. Density of water varies at each turn of the tide which are semi diurnal with prominent diurnal effect.

It is therefore advisable that the masters check the density of water at the CPA outer anchorage. The port entry permissible draft for vessels varies from day to day, the maximum being 9.14 meters.

This draft of 9.14 meters is the maximum permissible for the river passage but maximum draft permissible alongside discharging berth 8.53 meters only. It thus follows if the vessel arriving with a draft deeper than the port entry permissible

draft will surely have to lighten cargo at Chittagong outer anchorage.

Chittagong outer anchorage is an open anchorage customarily used as place for lighterage. Such lightering is performed EX-vessels which have draft deeper than the port entry permissible draft and the lighterage is performed within commercial limit of the anchorage. Vessels at the CPA outer anchorage remain on her own anchor and are normally tide rode and swings around with the change of tide.

Strong under water current of 6/7 knots prevails at the outer anchorage and vessel with deeper drafts frequently drafts. Lighter vessels which come alongside mother vessels are tied to mother vessel.

Using the mooring lines of the lighter vessel in order to prevent ranging damages to mother vessel and also to prevent inflicting damages to her own while berthing / unearthing and while remaining alongside, adequate number of fenders are used by the lighter vessels. High waves and long swells also prevail at the anchorage and during inclement weather condition, lightering becomes difficult and uncertain at times. Mother vessels due to reason of strong under-water current, do drag anchor but taken sufficient precautionary measure. Such as allowing sufficient length of anchor of say about nine (9) shackles and maintaining watches round the clock on the bridge including engine movement, such anchor dragging can be avoided.

Lightening of cargo at Chittagong outer anchorage becomes relatively more difficult with the onset of monsoon and the period from May to October is considered as the monsoon. At any time within this period, rough sea and inclement weather is a common feature of the weather condition and often the weather condition deteriorates so abruptly that incidents, such as the one under consideration, becomes unavoidable. During this period, lighter vessels fastened alongside mother vessel experience heavy rolling and pitching often causing hard scarping, bending and indentations to the mother vessels railing and hull. This is despite the fact that generally the lighter vessel has fendering arrangements consisting of old mooring ropes wrapped around wooden spars often used or second hand tyres from automobiles are also used as fenders. Insofar as damages to mother vessel are concerned, top shell plate of the forecastle deck, bulwark gunwale, bulk head (Both port and STBD side), brackets underneath and horizontal to gunwale and the hull in general are the areas of the mother vessel prone to contact damages caused by lighters situation worsens often because of the fact that generally the lighter vessel do not have winches for and aft in order to heave up berthing ropes quickly.

It is true that lightering at Chittagong outer anchorage during the period of yearly monsoon is difficult but it is only during some of seasonal the period. If adequate preventive measures are taken, collisions of the nature under consideration can be avoided.

However due consideration to the involved facts and circumstances leading to particular incident are to be given. Usually the free board of a lighter vessel is much higher than that of the mother vessel when the former approaches the latter the reason being that the lighter vessel is in light condition while the mother vessel is fully loaded to avoid

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contact damage in such a situation a close communication / coordination between both the lighter and mother vessel involved are needed.

Master of vessel are advised to observe Admiralty Notices describing prohibited Anchorage and proposed Anchorages. On arrival at the outer Anchorage, the vessels should proceed to marked anchorage clear off the prohibited Anchorage and contact the signal station Port Radio Control on VHF-ch-12 to indicate the time and position of the vessels anchored. This signal station Port Radio Control keeps constant watch and records the arrivals and departures of vessels and transmits and receives advance information of urgent nature.

Chittagong port official website [www.cpa.gov.bd](http://www.cpa.gov.bd) includes required instruction to the Mariners in detail, however, relevant navigational information's as per Chittagong port regulations are given below which need to be followed for safe navigation:

1. SHIP MOVEMENT generally commences about 4/5 hrs before the day's High water.
2. MOVEMENT OF VESSELS on the day's marked AM & PM depends upon draught, rise of tide, availability of berth & available day light. All concerned are to consult the Harbour Master 24 hrs before the movement. In such cases Ship's with day's maximum draught will be handled during AM or PM depending on the availability of day light hours.
3. DURING the spring tide/freshets/foul weather vessels under 7 knots will not be normally handled and all such vessels will be classed at GRADE-II for operational purposes and shall be handled conveniently. Agents of such vessels are required to consult the undersigned well in advance.
4. The port will not be responsible if the declared draughts are reduced due to conditions arising out of freshet effect or other causes which cannot be forecast. Owners & Owner agents are advised to consult the undersigned regarding deep draught vessels in advance.
5. Vessels entering or leaving port must have full power on main engine & deck machinery's, both anchors with full length of chain must be available for use at all time.
6. All vessels entering/leaving port shall display their signal letters.
7. a. Ship Masters are required to anchor clear of the "PROHIBITED ANCHORAGE".  
b. Ship Masters must not anchor their vessels near the River entrance.  
c. Ship Masters must manoeuvre with great care while embarking/disembarking pilots.  
d. Pilot ladder as per regulation must be provided.  
e. Ship Masters must note that the strong tidal conditions prevail at outer anchorage and utmost  
f. Care must be taken while manoeuvring anchoring or heaving up anchors.  
g. Crossing of bow at close range shall never be attempted.
8. Ship master are advised in their own interest to maintain watch on the Forecastle and poop while the vessels are at outer anchorage.
9. Ship master must sent their ETA, DRAUGHT and other particulars to the undersigned well in advance.
10. All ships in port to provide requisite "RAT GUARDS" in the mooring ropes.

11. Ship master on arrival and prior to departure, are required to ensure that the vessels draught marks are clearly visible for Pilots to read the draught correctly.

12. Ship master are required to ensure that no major chipping of ships side is carried out while their vessels are in port.

13. UNDUE "SMOKING" from the vessels within the port area is strictly prohibited.

14. DISCHARGING of water on the jetty and listing of vessels while alongside is strictly prohibited.

15. Karnafulli being tidal river, it is essential for vessels entering port to have six good ropes (HAWSER & WIRE) forward and similar six ropes aft for mooring purpose.

16. IN AN EMERGENCY, Signal for Tug in port consists of 4 prolonged blasts on the whistle.

17. IN AN EMERGENCY, the following may be contacted on PHONES.

18. VHF(R/T) watch is maintained in the Port Administrative Building, round the clock and the same can be contacted any time during day or night channel-12(Frequency 156.6MHZ or Channel-16, Frequency 156.8 MHZ) watch on 2182 KHZ is also maintained simultaneously.

19. Ship masters approaching Chittagong road are advised not to attempt to cross bow of vessels at anchor/underway to avoid drifting on them resulting probable collision in view of the prevailing strong current at outer anchorage. However, if it is inevitable to cross, ship master may do so with caution by giving wide berth to the vessels at anchor/underway considering the minimum velocity of the current being 6 knots and other marine factors.

20. When a vessels is given standby from Radio Control for entering Port & Pilot is on his way, it is advisable that ship master should heave up anchor and wait for the Pilot steaming the tide near about position, Patenga Lighthouse bearing 045° (T) distance 2 miles if deemed safe to do so.

21. Vessels having container on deck obstructing clear view of forward and or obstructing clear view of starboard side when viewed from port bridge wing and vice versa will not be allowed to navigate in the channel of Karnafulli River. When considering clear view, small craft crossing the vessels bow should be taken into account.

22. Vessels arriving for demolishing purpose are advised to drop anchor North of Lat: 22° 16' that is North of Alfa Anchorage.

23. Under all circumstances international regulation for preventing collision at sea, 1972 and as amended in 2002 to be followed as closely as possible while navigating within the Port limit of CPA.

24. Admiralty Chart No. 84 "Approaches to the "Karnafulli River" Bay of Bengal Folio", Admiralty Chart No. 859 "Elephant point to Matla River": Bay of Bengal Folio. These charts need to be considered.

Reference: Chittagong Port Authority official website [www.cpa.gov.bd](http://www.cpa.gov.bd).

UNQUOTE