

Merchant Shipping Notice No. _____ of 2017

Sub.: Revision to safety fairway at approaches to Mumbai (off Mumbai High) - reg.

1. The Directorate General of Shipping had issued MS Notice No. 15 of 2008 (File no. 44-NT(13)/2007) dated 16.07.2008 for establishment of safety fairways, recommended routes and traffic separation scheme (TSS) to enhance safety of navigation in Indian waters (inclusive of the offshore development areas).
2. The details of coordinates for the safety fairway, recommended routes and traffic separation scheme (TSS) 'India - West Coast - Inner approaches to Mumbai' was published in the Indian Notices to Mariners Edition No. 14 of 2008 dated 16.07.2008.
3. Oil & Gas exploratory activity and/or survey are being regularly carried out in the offshore development areas, including (at times) within the present safety fairway at approaches to Mumbai (off Mumbai High) and near to its proximities. This Directorate has therefore been in receipt of various requests by Governmental agencies for revising this safety fairway.
4. The matter was discussed with the various stakeholders and accordingly, a revision to present safety fairway has been carried out after taking into consideration the navigational and safety aspects, ease in flow of traffic of merchant vessels and the avoidance by ships to areas under survey, exploration and exploitation activity.
5. The revised routing measure specified in this M. S. Notice supersedes the earlier safety fairway established at approaches to Mumbai (off Mumbai High) promulgated vide MS Notice 15 of 2008 (File no. 44-NT(13)/2007) dated 16.07.2008 and published in the Indian Notices to Mariners Edition No. 14 of 2008 dated 16.07.2008.
6. The co-ordinates of the revised routing measure (Annexure - I) has been incorporated into INT Chart No. 7334 (Annexure - II, Chart is not to be used for navigation) and enclosed with this M. S. Notice for information.
7. This MS Notice shall come into force with effect from **01.01.2018** and is issued with the approval of the Director General of Shipping and Special Secretary to Government of India.

(Capt. Anish Joseph)
Nautical Surveyor-cum-
Dy. Director General of Shipping [Tech.]

Enclosure:

1. Annexure - I; Co-ordinates of the routing measure
2. Annexure - II; INT Chart No. 7334 (Not to be used for navigation)

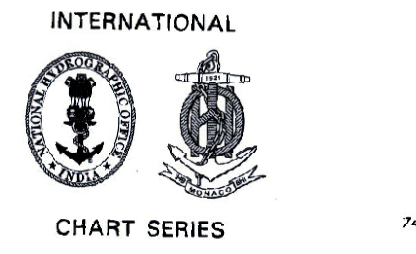
Annexure I to Draft MS Notice ___ of 2017

| Co-ordinates of Separation Line | | | | | | | | |
|--|-----------------|-----------------|------------|------------|------------|------------|------------|------------|
| Sl No. | POINT_ X | POINT_ Y | Deg | Min | Sec | Deg | Min | Sec |
| A | 18.35036 | 71.19348 | 18 | 21 | 1.298 | 71 | 11 | 36.524 |
| A' | 18.28654 | 71.24613 | 18 | 17 | 11.548 | 71 | 14 | 46.054 |
| B | 18.52927 | 71.53095 | 18 | 31 | 45.371 | 71 | 31 | 51.429 |
| B' | 18.47808 | 71.594 | 18 | 28 | 41.072 | 71 | 35 | 38.414 |
| C | 18.91172 | 71.90835 | 18 | 54 | 42.199 | 71 | 54 | 30.045 |
| C' | 18.87602 | 71.93169 | 18 | 52 | 33.677 | 71 | 55 | 54.097 |
| D | 18.91127 | 72.12142 | 18 | 54 | 40.558 | 72 | 7 | 17.124 |
| D' | 18.87535 | 72.11849 | 18 | 52 | 31.276 | 72 | 7 | 6.554 |
| E | 18.86644 | 72.31846 | 18 | 51 | 59.196 | 72 | 19 | 6.449 |
| E' | 18.83238 | 72.3153 | 18 | 49 | 56.576 | 72 | 18 | 55.07 |
| F | 18.86404 | 72.53213 | 18 | 51 | 50.543 | 72 | 31 | 55.681 |
| F' | 18.8243 | 72.54295 | 18 | 49 | 27.468 | 72 | 32 | 34.602 |
| G | 18.86464 | 72.57206 | 18 | 51 | 52.694 | 72 | 34 | 19.4 |
| G' | 18.81524 | 72.59078 | 18 | 48 | 54.865 | 72 | 35 | 26.799 |
| H | 18.84149 | 72.6801 | 18 | 50 | 29.349 | 72 | 40 | 48.351 |
| H' | 18.81819 | 72.68078 | 18 | 49 | 5.477 | 72 | 40 | 50.808 |
| I | 18.84783 | 72.73223 | 18 | 50 | 52.171 | 72 | 43 | 56.04 |
| I' | 18.82903 | 72.7343 | 18 | 49 | 44.516 | 72 | 44 | 3.476 |
| J | 19.05111 | 72.47098 | 19 | 3 | 3.998 | 72 | 28 | 15.542 |
| J' | 19.04779 | 72.51495 | 19 | 2 | 52.053 | 72 | 30 | 53.832 |
| K | 19.39782 | 72.41143 | 19 | 23 | 52.156 | 72 | 24 | 41.143 |
| K' | 19.39859 | 72.4663 | 19 | 23 | 54.941 | 72 | 27 | 58.693 |
| L | 19.65533 | 72.42233 | 19 | 39 | 19.176 | 72 | 25 | 20.388 |
| L' | 19.6708 | 72.48186 | 19 | 40 | 14.875 | 72 | 28 | 54.687 |
| M | 19.71201 | 72.39538 | 19 | 42 | 43.231 | 72 | 23 | 43.366 |
| M' | 19.74595 | 72.4409 | 19 | 44 | 45.421 | 72 | 26 | 27.246 |
| N | 19.7942 | 72.28316 | 19 | 47 | 39.131 | 72 | 16 | 59.393 |
| N' | 19.83206 | 72.32931 | 19 | 49 | 55.429 | 72 | 19 | 45.514 |
| O | 19.90337 | 71.89086 | 19 | 54 | 12.132 | 71 | 53 | 27.088 |
| O' | 19.95394 | 71.90226 | 19 | 57 | 14.189 | 71 | 54 | 8.122 |
| P | 19.89284 | 71.39214 | 19 | 53 | 34.228 | 71 | 23 | 31.714 |
| P' | 19.94165 | 71.38938 | 19 | 56 | 29.944 | 71 | 23 | 21.777 |
| Q | 18.49795 | 72.47966 | 18 | 29 | 52.635 | 72 | 28 | 46.76 |
| Q' | 18.49657 | 72.52696 | 18 | 29 | 47.647 | 72 | 31 | 37.06 |
| R | 18.25876 | 72.52069 | 18 | 15 | 31.536 | 72 | 31 | 14.489 |
| R' | 18.26163 | 72.56697 | 18 | 15 | 41.864 | 72 | 34 | 1.085 |

Annexure I to Draft MS Notice ___ of 2017

| Co-ordinates of Separation Zone | | | | | | | | |
|--|----------------|----------------|------------|------------|------------|------------|------------|------------|
| Sl No. | POINT_X | POINT_Y | Deg | Min | Sec | Deg | Min | Sec |
| A | 18.31293 | 71.20431 | 18 | 18 | 46.558 | 71 | 12 | 15.523 |
| A' | 18.302 | 71.21183 | 18 | 18 | 7.196 | 71 | 12 | 42.592 |
| B | 18.53025 | 71.57833 | 18 | 31 | 48.886 | 71 | 34 | 41.973 |
| B' | 18.51959 | 71.58797 | 18 | 31 | 10.541 | 71 | 35 | 16.693 |
| C | 18.66804 | 71.70551 | 18 | 40 | 4.932 | 71 | 42 | 19.831 |
| C' | 18.66532 | 71.70832 | 18 | 39 | 55.154 | 71 | 42 | 29.943 |
| D | 18.65788 | 71.71775 | 18 | 39 | 28.369 | 71 | 43 | 3.885 |
| D' | 18.66074 | 71.71493 | 18 | 39 | 38.646 | 71 | 42 | 53.764 |
| E | 18.89718 | 71.91562 | 18 | 53 | 49.831 | 71 | 54 | 56.233 |
| E' | 18.88976 | 71.91991 | 18 | 53 | 23.132 | 71 | 55 | 11.688 |
| F | 18.89359 | 72.11755 | 18 | 53 | 36.939 | 72 | 7 | 3.197 |
| F' | 18.88786 | 72.11658 | 18 | 53 | 16.284 | 72 | 6 | 59.703 |
| G | 18.85275 | 72.31657 | 18 | 51 | 9.908 | 72 | 18 | 59.668 |
| G' | 18.84618 | 72.3163 | 18 | 50 | 46.247 | 72 | 18 | 58.665 |
| H | 18.84362 | 72.53825 | 18 | 50 | 37.02 | 72 | 32 | 17.707 |
| H' | 18.83687 | 72.54011 | 18 | 50 | 12.732 | 72 | 32 | 24.394 |
| I | 18.84385 | 72.58038 | 18 | 50 | 37.875 | 72 | 34 | 49.366 |
| I' | 18.83982 | 72.58138 | 18 | 50 | 23.362 | 72 | 34 | 52.972 |
| J | 18.83154 | 72.68073 | 18 | 49 | 53.533 | 72 | 40 | 50.614 |
| J' | 18.82749 | 72.68078 | 18 | 49 | 38.975 | 72 | 40 | 50.814 |
| K | 18.86563 | 72.54796 | 18 | 51 | 56.251 | 72 | 32 | 52.671 |
| K' | 18.86665 | 72.55469 | 18 | 51 | 59.949 | 72 | 33 | 16.878 |
| L | 19.0483 | 72.48664 | 19 | 2 | 53.876 | 72 | 29 | 11.892 |
| L' | 19.05063 | 72.49439 | 19 | 3 | 2.256 | 72 | 29 | 39.81 |
| M | 19.39613 | 72.42899 | 19 | 23 | 46.066 | 72 | 25 | 44.377 |
| M' | 19.39665 | 72.43731 | 19 | 23 | 47.936 | 72 | 26 | 14.323 |
| N | 19.66322 | 72.44809 | 19 | 39 | 47.582 | 72 | 26 | 53.118 |
| N' | 19.66434 | 72.45617 | 19 | 39 | 51.62 | 72 | 27 | 22.228 |
| O | 19.72729 | 72.41376 | 19 | 43 | 38.258 | 72 | 24 | 49.52 |
| O' | 19.73123 | 72.41898 | 19 | 43 | 52.435 | 72 | 25 | 8.328 |
| P | 19.80262 | 72.31956 | 19 | 48 | 9.421 | 72 | 19 | 10.402 |
| P' | 19.80765 | 72.32287 | 19 | 48 | 27.554 | 72 | 19 | 22.324 |
| Q | 19.92857 | 71.88965 | 19 | 55 | 42.835 | 71 | 53 | 22.733 |
| Q' | 19.93615 | 71.8895 | 19 | 56 | 10.124 | 71 | 53 | 22.199 |
| R | 19.91921 | 71.39475 | 19 | 55 | 9.146 | 71 | 23 | 41.098 |
| R' | 19.92583 | 71.39524 | 19 | 55 | 33.003 | 71 | 23 | 42.847 |
| S | 18.26501 | 72.53564 | 18 | 15 | 54.022 | 72 | 32 | 8.318 |
| S' | 18.26661 | 72.54412 | 18 | 15 | 59.787 | 72 | 32 | 38.847 |
| T | 18.49713 | 72.49985 | 18 | 29 | 49.684 | 72 | 29 | 59.455 |
| T' | 18.49893 | 72.51007 | 18 | 29 | 56.138 | 72 | 30 | 36.268 |
| U | 18.81372 | 72.55875 | 18 | 48 | 49.403 | 72 | 33 | 31.487 |
| U' | 18.81269 | 72.56851 | 18 | 48 | 45.685 | 72 | 34 | 6.637 |

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APPROACHES TO MUMBAI

DEPTHS IN METRES
SCALE 1:300 000 at Lat 17° 00'

Depths are in metres and are reduced to Chart Datum, which is approximately the level of Lowest Astronomical Tide.
Heights are in metres. Underlined figures are drying heights above Chart Datum; all other heights are above Mean High Water Springs/Mean Higher High Water.
Horizontal Datum: World Geodetic System 1984.
Projection: Mercator.
Navigational marks: IALA Maritime Buoyage System - Region A.
Sources: The origin, scale, date and limits of the hydrographic information used to compile this chart are shown in the Source Diagram. Later additions and corrections to this chart are derived from Survey of India maps and IN Surveys.

FISHING STAKES
Fishermen are cautioned that fishing stakes and gear are liable to be met with depths of less than 20 metres.

OMISSION OF CERTAIN NAVIGATIONAL AIDS AND BUREAUX
Current lights, buoys and aids have been omitted from this chart, for details of these, the appropriate charts and the date of issue should be consulted.

SATELLITE-DERIVED POSITIONS
Positions obtained from satellite navigation systems are normally referred to the World Geodetic System 1984 datum. Such positions may be placed directly on the chart.

CURRENTS
The current are of oceanic origin, but tend to follow the trend of the Coast. In December and January with easterly winds, the current may be set and strength altered. When the SW monsoon is well established, a south-easterly set with strength of up to 3 knots are experienced. Exceptionally, under the influence of a low pressure system, the current may be set and strength altered. Current information is also available in the Admiralty Notices to Mariners.

ANCHORAGE AREA (GRAND EAST AND WEST)
Ships should not anchor in the GRAND EAST and other vessels in the GRAND WEST in accordance with the charted depths keeping clear of the obstructions, the ground, the cables and the pipelines.

VELOCITY OF CURRENTS
For details of Mumbai Port Vessel Traffic Survey, see Indian List of Radio Signals, Volume II.

| Place | Lat | Long | Height in metres above datum | | | |
|--------------------|-------|-------|------------------------------|-----|------|-----|
| | | | MHW | MLW | MLWS | MSS |
| 1. Bombay | 18 52 | 72 52 | 4.8 | 3.9 | 2.0 | 0.9 |
| 2. Salsette | 19 02 | 72 48 | 4.8 | 3.9 | 2.0 | 0.9 |
| 3. Vashi (Seaside) | 19 27 | 72 48 | 4.4 | 3.4 | 1.9 | 1.0 |
| 4. Vashi (Inland) | 19 28 | 72 48 | 4.2 | 3.2 | 1.8 | 0.9 |
| 5. Apollo Bunder | 19 36 | 72 40 | 4.4 | 3.0 | 1.9 | 0.8 |
| 6. Bhandra | 19 32 | 72 44 | 3.2 | 2.2 | 1.7 | 0.8 |
| 7. Marine Drive | 19 32 | 72 44 | 3.1 | 1.6 | 0.8 | 0.2 |

ANCHORING AND DRAWLING PROHIBITED
Ships are prohibited from anchoring and drawing in the area marked by a 7 shaped double line due to the existence of oil and gas pipelines carrying inflammable material under high pressure and immense cable high voltage. Any ship drawing there could face an immediate hazard. Mariners are strongly advised not to anchor or draw in the vicinity of pipelines and cables unless they are under the supervision of the Marine Special Edition, Notice No. 17.

OFFSHORE DEVELOPMENT AREA
Offshore production platforms, underwater construction work on wellheads and pipelines, single buoy moorings and oil derricks, only some of which carry lights, are marked on this chart. All other structures are not shown, special caution should be exercised and vessels are advised to contact the appropriate authorities for details of these structures. Vessels are advised not to enter these areas and their boundaries with the 7 shaped double line for which Government of India will not be liable in any way.

SAFETY FAIRWAYS
An area within which vessels are not permitted for the carriage of oil or gas related cargoes. The use of a safety fairway is not usually mandatory, but is recommended. Safety fairways in Arabian Sea have been provided due to increased weather related marine accidents and dense traffic.

TRAFFIC SEPARATION SCHEME
The Government of India has established 600 metres Safety Zones around each installation in these Offshore Development Area. Mariners should not enter these safety zones. For details see the Indian Notices to Mariners Special Edition, Notice No. 20.

GAS PIPELINES
Attention is drawn to the existence of subsea pipelines whose presence on the seabed may effectively reduce the charted depth by as much as 2 metres. Gas pipelines carrying flammable gas under high pressure and at great depth causing damage might face an immediate fire hazard. Vessels should not anchor or draw in the vicinity of pipelines.

SOURCES

| IN Surveys | Scale |
|-------------|----------------------|
| 2011 | 1:75 000 |
| 2010 | 1:50 000 |
| 2009 | 1:50 000 - 1:80 000 |
| 2008 - 11 | 1:12 500 - 1:75 000 |
| 2006 - 07 | 1:10 000 - 1:75 000 |
| 2005 | 1:10 000 - 1:80 000 |
| 2003 | 1:150 000 |
| 1995 - 2011 | 1:75 000 |
| 1985 - 98 | 1:75 000 - 1:150 000 |
| 1985 - 98 | 1:300 000 |

Legend

- Traffic flow
- New 4 proposed Safety Fairway
- Traffic Separation Scheme

