

" GUIDELINES TOWARDS PASSAGE PLANNING "

“Passage Plan” – IMO Resolutions A.960(XXIII) and A.893(XXI).

Access To/From RIO DE LA PLATA - RIO PARANA

OPTIONS BETWEEN MARTIN GARCIA AND EMILIO MITRE CHANNELS

To navigate between Parana River ports and the Rio de la Plata, up or downriver, there are two choices:

- Through the Martin Garcia Channel (MGC)
- Through the Emilio Mitre Channel (EMC)

Both ways merge at Km 234 of the main fairway Rio Parana after transiting lower reaches / lower Paraná Delta. The distances are in favour of the EMC by about 10 KM only. The benefit of one of them over the other lies mainly in **safety** and **transit time/delays** issues.

Sailing via MGC vessel must navigate to/from Km 234 through the Parana Guazú, Pasaje Talavera, once again enter Parana Guazú, eventually Parana Bravo and finally Martin Garcia Channel, which begins at Km 145, ending finally at Km 39 close to the Zona Comun Pilot Station.

Sailing via EMC, to/from Km 234, vessels must transit through the Parana de Las Palmas River, Emilio Mitre Channel and partly the Buenos Aires approach channel until Km 37.

In general it's advisable to use the MGC for vessels sailing upriver in ballast, as from Zona Comun, towards River Parana ports and for laden vessels to use the EMC.

Following reasons justify such options, i.e.:

- The MGC is, most of its stretch (Km 39 to Km 118) a *one-way channel*. In that section, ships whose lengths over all are between 120 and 200 m or with draft up 24 feet (7,31 m), may pass only in three places (Km. 86,2 / 93.0 – Km. 107.6 / 110,5 – Km. 116.2 / 145,5), whilst those above 200 meters in length or more than 24 feet (7.31 m) draft, may do so at other three places (Km. 88,1 / 91.1, Km 107.6 / 110.5 and Km 118.2 / 145.5).
- The navigation of above-mentioned 80 kilometres requires experienced helmsmen and utmost attention by the Bridge Team, due to:
 - The channel is relatively narrow and smallest deviation from its centreline affects steerage; speed is limited, consequently transit time is longer.
 - At several channel sections, cross-tidal current exists. To counteract drift/current set by altering course, leads towards apparent increase of ship's beam in turn demanding a greater channel track which can be compounded due to effect of speed restriction, as greater rudder angle required to compensate drift.
- Presently, determining depth in way MGC is 9,75 m whilst for the EMC it reads as 10,00 m. or more. In both channels tide affects admissible transit drafts. The High Water times is approximately the same for both, however the high tide levels are not; as those for the MGC upon basis Colonia port are below 0,40 m. in comparison to EMC, basis Buenos Aires port.
- In MGC the only two places which regulations allow ships to anchor in order to await tide (Drafts about 30 feet) - Kms. 124,3 -130,2 and Kms. 137,3 - 141,4 - are far off from determining depth at Km 63,8, hence careful reckoning on tidal prediction is required, in turn leading towards and additional under keel clearance, since once navigation downriver is commenced there is no possibility of anchoring or of returning.

- In way Km 63,8, to date the shallowest place, the nature of bottom soil is hard. Statutory under keel clearance (UKC) is 0,60 m for a vessel underway. Recognised international institutions recommend a greater UKC when nature of bottom soil is hard. One incident with damages to hull and bottom structures - with other potential consequent risks - have occurred in this place. In the EMC the nature of bottom soil is **soft** mud, hence no risks attached in touching ship's bottom.
- Bathymetric surveys and regular maintenance dredging are frequent in the EMC whilst the contrary applies to lower reaches/Delta area of the Paraná (Paraná Guazú, Pasaje Talavera, Paraná Bravo).
- The nature of traffic to/from upriver ports of the Rio Paraná is: mainly about 90 % of vessels inbound in ballast and outbound laden with grain & derivatives.
- Notwithstanding that, in the Parana de Las Palmas there are several places where crossings are not allowed, vessels sailing upstream are "give way" ones to those sailing downriver in the majority of cases - depending on prevailing river conditions and stretch of same-, hence should sailing upstream in ballast be encouraged the overall effect is a general delay to all ships and the emergence of a "queue" /convoy effect of those coming downriver, which in turn have to observe a safe distance in between ships. If vessels in ballast observe convenience of sailing upriver via MGC risks and delays are lessened.

Each and all of the above mentioned points lead towards and back the conclusion that :***Its advisable to use the MGC for vessels proceeding upstream in ballast and the heavily laden vessels to privilege the use of the EMC for downriver navigation. However, in certain cases, for those inbound ships loaded with iron ore, coal or fertilizers proceeding towards San Nicolas, Villa Contitución, Rosario or San Lorenzo it's advisable also for them to use the EMC.***

In spite of above guidelines, it's possible that under certain conditions, other decisions may have to be taken due to:

- Temporary obstructions of either the EMC or MGC due to groundings or dredging.
- Storms or strong winds, which may affect ships with large windage areas particularly in the unprotected waters in way MGC, or which also, affect radar detection of buoys due to "clutter".
- Dense persistent fog in Rio Parana de Las Palmas.

Remarks:

- Vessels sailing downriver in ballast are not subject to above limitations.

MGC was designed as a one way channel, for a vessel of 245 m length and 32.60 m breath. In spite of this, present regulations allow larger vessels to transit the channel (up 277 m length and 43 m breath), under certain conditions of weather and tide. Vessels surpassing that sizes require agreement with Riovía S.A. and Maritime Authorities. Anyway, in this cases, both, Riovía S.A and Maritime Authorities extricate any liability.

Bridges Height: CMG (Paraná Guazú), 47,50 m. **CEM** (Zárate), 49 m. Both Zero local tide level.

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