



**PIANC**

The World Association for  
Waterborne Transport Infrastructure

**PIANC WG 168  
RecCom**

## SINGLE POINT YACHT MOORING DESIGN

### TERMS OF REFERENCE

#### 1. Historical background

Single point moorings are often provided by port authorities as a facility for visitors in locations where there is poor holding ground, deep water or where there is a requirement to moor boats more densely than can be achieved using yachts own anchors. In some locations anchor damage to sensitive seabed ecology can be minimised by provision of moorings.

In exposed locations, such as the island of St Helena in the south Atlantic, visiting yachts are important to the economy but the difficulties of anchoring mean that many yachts will not visit unless secure visitor moorings are provided.

The provider of moorings needs to have confidence that the moorings are properly designed and maintained since failure of a mooring can result in serious damage or even loss of a vessel, as has previously occurred at St Helena.

In carrying out the recent design of 25 new single point visitor yacht moorings for St Helena it became apparent that there is a lack of clear guidance within this field of work.

#### 2. Objectives

To prepare a set of guidelines that outlines the design approach for single point yacht moorings.

#### 3. Earlier reports to be reviewed

PIANC – Mooring Systems for Recreational Craft, 2002.

Code of Practice for Maritime Structures BS6349 Part 6: Design of Inshore Moorings and Floating Structures.

“A Code of Practice for the Design, Construction and Operation of Coastal and Inland Marinas and Yacht Harbours”, prepared by the Yacht Harbour Association Ltd, Ashford, Kent, UK.

"Design of Marine Facilities for the Berthing, Mooring, and repair of vessels", 2nd edition by John W. Gaythwaite, 2004

"Fleet Moorings, Basic Criteria and Planning Guidelines, Design Manual 26.5", Naval Facilities Engineering Command, 1985.

#### **4. Scope**

The matters to be investigated will be guidance on swing radius calculation, catenary length, maximum vessel size, clearance between vessels, anchorage systems, mooring hardware types and sizes, maintenance requirements.

Example method of approach, to be reviewed by working group:

- 1) Search for information and guidance on single point mooring systems including PIANC documents and other guidelines.
- 2) Review documents and guidelines extracting useful information.
- 3) Consult with designers, harbour authorities and mooring equipment suppliers to get an understanding of single point moorings in practice.
- 4) Prepare guidelines based upon this review.
- 5) Review guidelines in line with objective.

#### **5. Intended product**

A final set of PIANC guidelines in typical format. The guidelines should come with worked examples and references to cover unusual designs.

#### **6. Working Group membership**

Technical and professional experts in planning design of marinas. Technical and professional experts in design of marine moorings. Technical and professional experts in the design of offshore moorings. Operational and management consultants of marinas and mooring facilities. Contractors and suppliers of mooring hardware. Diving experts in the field of inspection and maintenance of offshore marine moorings.

#### **7. Relevance for countries in transition**

A standardised guideline is the desired goal. However, the guidelines must remain adaptable to multi-national best practice.

#### **8. Climate Change**

As result of the preliminary approach for preparing the TOR, it seems reasonable to consider that climate change does not affect this topic.