



InCom WG 129

Waterway Infrastructure Asset Maintenance Management

Terms of Reference

Background

In order to ensure the safety of infrastructure constructions with respect to limited financial resources and increasing computer capabilities asset management systems for infrastructures are more and more implemented. The general problem of waterway-constructions (e.g. compared with bridges) are the different constructions (locks, weirs, culverts, safety gates, ship lifts,...) and the different construction types (e.g. for locks: reinforced concrete, gravity walls, sheet pile walls, with/without water saving basins, different hydraulic systems, different gate types) combined with their specific kinds of use and damages and the different effects these damages will have. It is known that most of the PIANC members, who are responsible for the waterways safety, use an computerised asset management system.

Objective

The main goal of inland waterway asset maintenance management-systems is to get useful, objective and comparable indicators for the present and the future state of the assets to be able to control maintenance and to plan the necessary budget.

The objective of this working group is to compare their national standards of

- the asset condition grades
- typical damages/-classes and models of their movement/development based on specific waterway assets
- the different practice to start (or not) maintaining the buildings

and to give recommendations for common standards, where it will be helpful. This working group seeks to gather input from the different waterway manager, consultants and administrations.

The result will be a tool to assist decision-makers to prioritize the expenditure on infrastructure maintenance and repairs and to act at the point of time with the most efficient effects. This tool can also be part of an computerized asset management or a worldwide database - if there is a later need.

Earlier Reports and Concurrent Working Group Activities

Report of WG 25 “Maintenance and Renovation of Navigation Infrastructure”, 2006

WG 30 “Inventory of Inspection and Repair Techniques on inland Navigation Structures” currently in progress

Matters to be Investigated

- implementation of a regular inspection scheme to collect information of the actual state of the assets
- determination of the required information of the state of the assets and their quality
- a system to gather the information of the assets condition
- a matrix of all structures with condition grade, statistical profile to show the movement of the assets condition
- define the most relevant indicators for (good/bad) damages and most important effects on the condition grade
- methods to pre-estimate the future state of the assets based on the present state (deterministic, probabilistic, damage based, condition based)
- determination of time of intervention from technical, economical and safety point of view
- most interesting examples of a system to link damages, repairs and expenditure together in order to show the dependences and the belonging best time of doing.

Method of Approach

Evaluation of the realized inspection frequencies and results (condition grades) and the asset-specific points of time to act. Work out a list of important criteria or indicators per damage and the best practices to act.

Suggested final product(s)

All results will be described in a published PIANC report and a belonging PIANC-Database. If practical and appropriate, participants will develop and distribute a technical brief containing results.

Recommended Members

Organizations representing the Inland Waterway system (especially artificial waterways/canals with hydraulic structures), e.g. administrations for waterway-management, consultants.

Relevance for Countries in Transition

The results will help to prioritize the asset maintenance and so the investments in waterways infrastructure throughout the world.