

SURVEYING OF WATERS IN THE FRG BY THE FEDERAL WATERWAYS AND SHIPPING ADMINISTRATION

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Key words: hydrography, surveying of waters, surveying system for "peilungen", echosounder systems, Federal Waterways and Shipping Administration.

ABSTRACT

In the surveying of waters, especially the geometrical information about the morphologic-topographical structure of any kind of offshore and inshore waters is recorded. This is necessary for giving detailed information e.g. for the safety use of the rivers, canals and coastal waterways by trade vessels or tourist ships.

The paper describes which measuring systems and surveying systems are used for these geodetic tasks with an impression of their reachable accuracies. By this, the use of modern multi channel and multi beam echo sounding systems are explained. For the part of positioning, the change from microwave radio location systems to location and navigation with Global Positioning System (GPS) is presented.

The examples are taken from daily practice at Federal Waterways in the Federal Republic of Germany (FRG). The author is Head of the Department Geodesy at the Federal Institute of Hydrology (FIH). The main tasks in Geodesy at FIH are research and development of new systems and methods for surveying of waters, so that the personnel of the Federal Waterways and Shipping Administration (FWSA) is able to optimise their monitoring - specially the water depths - of the Federal Waterways in FRG.

In connection to these tasks the geodetic survey offices of the 16 Federal Counties of FRG and the FWSA are co-operating in the field of GPS permanent reference stations. The Satellite Positioning Service (SAPOS HEPS) is used for high precise coordinates as results by regularly surveying of waters.

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