

SUMMARY

Gates of navigation locks, weirs, movable flood barriers, shipyard and harbour docks, etc. behave in a way that is – in some respects – not comparable to other structures. Their behaviour does not, usually, follow the rules of one single structural system. The system changes dependent on loading conditions and gate position at particular time. This property affects both the gate type selection and design arrangements of its contact areas. In this article, some typical aspects of gate contact behaviour are discussed. By gate contact behaviour we mean the interaction with civil structures (lock crowns, piers, sills, etc.), as well as between gate components, e.g. leaves of a mitre gate. The discussion refers in particular to mitre gate pintle bearing problems, followed by some recent views on vertical lift gate and rolling gate contact arrangements. Additionally, the principle of a sliding gate with so-called 'hydrostatic feet' is presented.

The Netherlands' experience with this contact arrangement is very encouraging.

The analysis of gate contact behaviour and its implications is not only the issue of detailed engineering. In fact, this issue is already significant at the very early stages of hydraulic gate projects. The intention of this article is to emphasise this, to increase the designers' awareness of this significance and to encourage them in giving more attention to the gate contact analyses. One of the tools is here the fourlevel analysis of gate contacts, as presented in this article. This and other tools are discussed in more details in the author's book 'Contact behaviour of lock gates and other hydraulic closures' that has recently been published. The current article can be seen as a 'trial' of that book.