

the locks, which is practicable at reasonable cost. When this is done, nearly every lake craft now afloat could pass out to sea with 14 feet draught, and load down to 20 feet at Montreal. There are over 2,500 steamers in Lloyd's Register of less width but of greater length than the Canadian lock chambers. The modern proportions of length to beam are 8, 9, and 10 to 1. The Canadian Commission adopted the proportions of Noah's Ark and made the lock chambers 6 to 1. At present the tendency is towards an increase of beam in proportion to length, and there may be a return to these scriptural proportions in future naval architecture; but this will not increase the capacity of those locks, though it may prove that they are not too short for their width or too wide for their length.

[The profiles accompanying this paper show the comparative elevations of all the routes, opened or proposed, between tide water and the Upper Lakes, including the Erie and the Champlain routes.]