

mediately took steps looking toward an improved lock, and a deepening of the Hay Lake channel.

The first step was to establish a new mean low water datum. The records as far back as they extended and much valuable and interesting information were dug out and a new "low water grade" was established which, as far as the writer knows, has fully met the requirements of the shipping interests. A series of graphs including an intermediate curve of some twelve to thirteen years, roughly agreeing with the twelve year cycle of the sun spots, and a 40 year curve roughly embracing three of the intermediate curves, were found. From this graphic delineation of the Great Lakes levels a formula was drafted: the lake levels differ as much as 1 ½ feet in twelve years, and as much as four feet in 40 years.

When this was decided a series of new soundings were made and corrected to this newly found low water datum and new levels established for lock sills, Since money was available, new contracts were let and the recently excavated channels were deepened some three feet, even more in the difficult or rock cuts. Again the river was infested with dredges, many of them the same ones that had been on the job two years before. As both the engineers and the contractors were better acquainted with the currents, soils, etc., the new prices obtained in the work were surprisingly low.

During the surveys the possibility of double tracking a portion of the existing channel was noticed and during slack intervals of the work surveys were made in detail of this new outlet and an estimate prepared. A large part of these new improvements was due to Chief Engineer Joseph Ripley. He had the vision and was a keen student of the possibilities and needs of the Great Lakes traffic.

The principal reason for this diversion through the west Neebish was that the channel from the head of the dike in the middle Neebish channel, down through little Mud Lake, the Dark Hole and through the Sailors Encampment was tortuous and tricky and the meeting of upbound traffic and downbound traffic was a perpetual menace. A bad collision with perhaps the sinking of a ship would effectually stop navigation between Lake Superior and Lake Huron. The authorities were quick to see the menace and immediately backed the new outlet with funds and authority,

*(To be continued) ...[click here](#)*