

er of the next convoy would arrive; during this space of time 6 boats would collect, and that is the proper maximum number for a convoy, to pass this tunnel upon the hypothesis assumed.

If the canal had double locks the convoy should consist of 11 or 12 boats and the passages still be hourly. Boats then ought to be passed through this tunnel both ways *at every hour*, and with an active trade it would be necessary to have a superintendent stationed at each portal to regulate the hourly transits, and perhaps also to provide gates or some other barrier under his control, to be opened *hourly* to admit the entrance and exit of convoys.

The hours fixed for the transit of convoys both ways should be regularly notified to the boatmen in print—thus :

Descending convoys will leave the south portal of the tunnel at
8 A. M.; 9 A. M.; 10 A. M.; &c.

Ascending convoys will leave the north portal of the tunnel at
8½ A. M.; 9½ A. M.; 10½ A. M.; &c.

All boats presenting themselves for passage, to conform strictly to the instructions of the tunnel superintendents, and haul into such positions as they may indicate. If boats should arrive at either portal, when no convoy was forming at the other, and no boats thence in sight, a system of signals could easily be concerted to communicate that fact, and the arriving boat in such case, be allowed by the superintendent to proceed without any delay.

It is evident from what has been said that the utmost detention that any boat can experience will be 60 minutes, whilst a boat arriving just as a convoy, in the same direction was setting out, would join its rear and not be detained at all; hence the average detention may be assumed at thirty minutes, which enables us to ascertain the real or effective saving in distance caused by the adoption of the tunnel route for the canal, in lieu of that located around the Pawpaw Bends.

| | <i>Miles.</i> |
|---|---------------|
| A canal around the Pawpaw Bends would be in length, | 6½ |
| The tunnel line—(including cuts, &c.) is, to the same points, | 1½ |
| | — |
| The saving in measured distance being, | 5 |

Now during the 30 minutes average detention, a boat proceeding at the rate of 2½ miles per hour, would move upon the